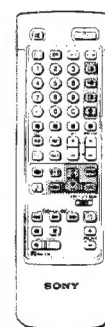
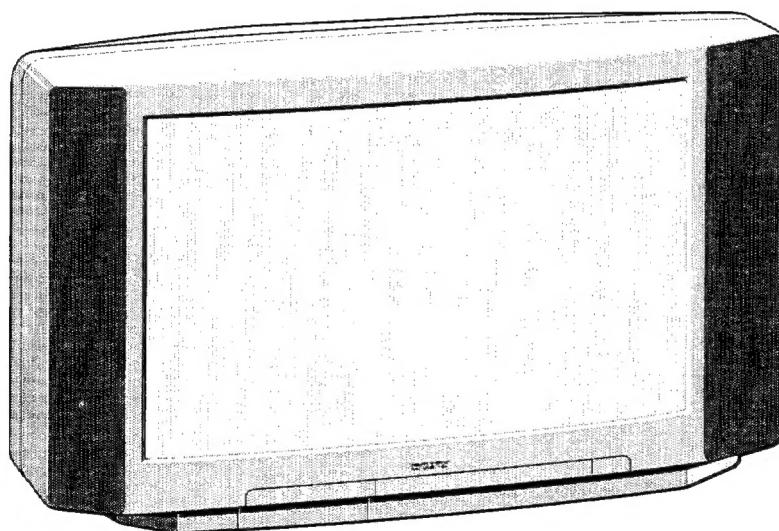


# SERVICE MANUAL

# AE-3 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-28WS3A	RM-838	Italian	SCC-J26B-A	KV-28WS3K	RM-838	OIRT	SCC-J29B-A
KV-28WS3B	RM-838	French	SCC-J27B-A	KV-28WS3U	RM-838	UK	SCC-J24A-A
KV-28WS3D	RM-838	AEP	SCC-J23A-A				
KV-28WS3E	RM-838	Spanish	SCC-J28B-A				



Super **Trinitron**  
**WIDE**

TRINITRON® COLOR TV  
**SONY®**

ITEM	MODEL	Television System	Channel Coverage	Colour System
Italian		B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R01-R12 UHF: R21-R69	SECAM, PAL, PAL + NTSC 3.58 (video input only) NTSC4.43 (video input only)
French		L, B/G/H, I	L VHF: F2-F10 UHF: F21-F69 Cable TV: B-Q B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 I B21-69	SECAM, PAL, PAL + NTSC 3.58 (video input only) NTSC4.43 (video input only)
AEP		B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: B-Q UHF: S21-S41	SECAM, PAL, PAL + NTSC 3.58 (video input only) NTSC4.43 (video input only)
Spanish		B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 SECAM D/K VHF: R01-R12 UHF: R21-R60	SECAM, PAL, PAL + NTSC 3.58 (video input only) NTSC4.43 (video input only)
OIRT		B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: B-Q UHF: S21-S41	SECAM, PAL, PAL + NTSC 3.58 (video input only) NTSC4.43 (video input only)
UK		I	UHF: 21-69	SECAM, PAL, PAL + NTSC 3.58 (video input only) NTSC4.43 (video input only)

MODEL	Italian	French	AEP	Spanish	OIRT	UK
Power Consumption	141W	153Wh	141W	153Wh	151W	199W

## SPECIFICATIONS

**Picture Tube** Super Trinitron Wide  
Approx. 71 cm (28 inches)  
(Approx. 66 cm picture measured diagonally)  
110° -deflection

### Rear/Front Terminals

#### [REAR]

- ② 21-pin Euro connector (CENELEC standard)
  - Input for audio and video signals
  - Input for RGB
  - Outputs of TV video and audio signals
- ②/② 21-pin Euro connector
  - Input for audio and video signals
  - Input for S video
  - Outputs of TV video and audio signals (selectable)
- ④/④ 21-pin Euro connector
  - Input for audio and video signals
  - Input for S video
  - Outputs of TV video and audio signals (monitor out)
- ②, ④ S video inputs - 4 pin DIN
- ② Audio inputs (L, R) - phono jacks
- ④ S video output - 4 pin DIN

- ② Audio outputs - phono jacks
- ② Audio outputs (variable) - phono jacks
- External speaker terminals : 2-pin DIN (5)

#### [FRONT]

- ② Video input - phono jack
- ③ Audio inputs - phono jacks
- ③ S video input - 4-pin DIN
- Ω Headphone jack : stereo minijack

**Sound output** 2x30W (music power)  
Centre 1x30W  
Surround 2x15W

**Dimensions** Approx. 798x491x531 mm

**Weight** Approx. 47 kg

**Supplied accessories** Remote Commander RM-838 (1)  
Scroll Commander RM-860 (1)  
Batteries R6 (2)  
Surround speaker (2)  
Surround Loudspeaker lead (2)

## Other features

Digital comb filter (High resolution)  
 FASTEXT  
 DNR (Digital Noise Reduction)  
 Scroll Commander  
 Dolby Digital Surround System  
 100Hz Digital Plus  
 Graphic Equalizer  
 PAP (Picture and Picture)  
 PAL plus


## [RM-838]

Remote control system infrared control  
 Power requirements 1.5V dc  
 1 battery IEC designation  
 R6 (size AA)  
 Dimensions Approx. 65x225x21 mm (w/h/d)  
 Weight Approx. 157g (Not including battery)

**Design and specifications are subject to change without notice.**

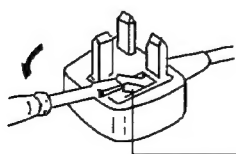
Model name	KV-28WS3A	KV28WS3B	KV-28WS3D	KV-28WS3E	KV-28WS3K	KV-28WS3U
Item						
Pal Comb	ON	ON	ON	ON	ON	ON
PIP	OFF	OFF	OFF	OFF	OFF	OFF
RGB Priority	ON	ON	ON	ON	ON	ON
60 Programs	OFF	OFF	OFF	OFF	OFF	OFF
PAL PLUS	ON	ON	ON	ON	ON	ON
DOLBY	ON	ON	ON	ON	ON	ON
DSP	OFF	OFF	OFF	OFF	OFF	OFF
EQUALIZER	ON	ON	ON	ON	ON	ON
SUB TUNER	ON	ON	ON	ON	ON	ON
PAP	ON	ON	ON	ON	ON	ON
MLT.PIP	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON
Front 3	ON	ON	ON	ON	ON	ON
Scart 4	ON	ON	ON	ON	ON	ON
DYN. CONV.	OFF	OFF	OFF	OFF	OFF	OFF
PIC. ROT.	ON	ON	ON	ON	ON	ON
Language Preset	Italian	French	German	Spanish	OIRT	English

### WARNING ( KV-28WS3U only )

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the  mark.

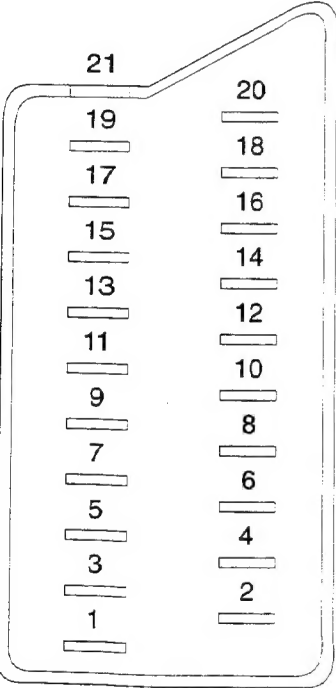
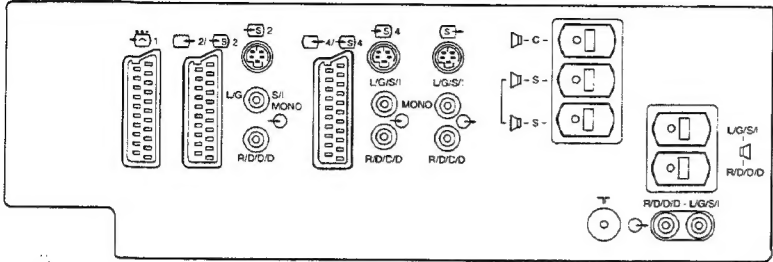
**IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.**

When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.  
 Open the fuse compartment with the screwdriver blade and replace the fuse.

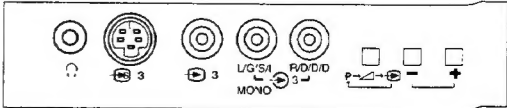
21 pin connector ( 1, S 2/ S 2, S 4/ S 4 )



Pin No		Signal	Signal level
1	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance: less than 1kohm*
2	○	Audio input B (right)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
3	○	Audio output A (left)	Standard level: 0.5Vrms Output impedance: less than 1kohm*
4	○	Ground (audio)	
5	○	Ground (blue)	
6	○	Audio input A (left)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
7	○	Blue input	0.7V±3dB, 75ohms, positive
8	○	Function select (AV control)	High state (9.5—12V): Part mode Low state (0—2V): TV mode Input impedance: More than 10kohms Input capacitance: Less than 2nF
9	○	Ground (green)	
10	○	Open	
11	○	Green	Green signal: 0.7V±3dB, 75ohms, positive
12	○	Open	
13	○	Ground (red)	
14	●	Ground (blanking)	
15	○	Red input	0.7V±3dB, 75ohms, positive
	—	(S signal) chroma input	0.3V±3dB, 75ohms, positive
16	○	Blanking input (Ys signal)	High state (1—3V) Low state (0—0.4V) Input impedance: 75ohms
17	○	Ground (video output)	
18	○	Ground (video input)	
19	○	Video output	1V±3dB, 75ohms, positive Sync: 0.3V(-3, +10dB)
20	○	Video input	1V±3dB, 75ohms, positive Sync: 0.3V(-3, +10dB)
	—	Video input/Y (S signal)	1V±3dB, 75ohms, positive Sync: 0.3V(-3, +10dB)
21	○	Common ground (plug, shield)	

○ Connected    ● Not Connected (open)    \* at 20Hz - 20kHz

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm , positive Sync. 0.3V -3/+10 dB
4	C (S signal) input	0.3V ± 3dB 75 ohm , positive Sync.



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**CAUTION**

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

**WARNING !!**

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.  
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.


**ATTENTION**

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

**ATTENTION !!**

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENTR ACCORDÉ À L'ALIMENTATION SECTEUR.

**ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!**

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES VUES EXPLOSÉES ET LES LISTES DE PIÉCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDICUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

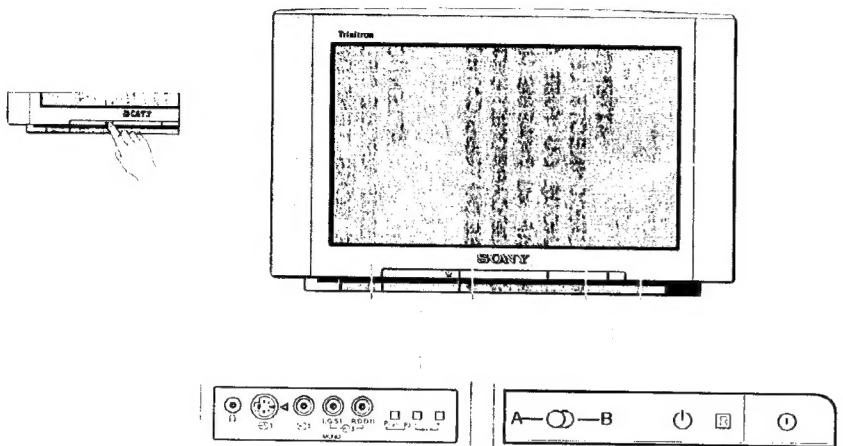
# Overview

## SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

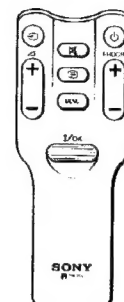
This section briefly describes the buttons and controls on the TV set and on the Remote Commander. For more information, refer to the pages given next to each description.

### TV set - front

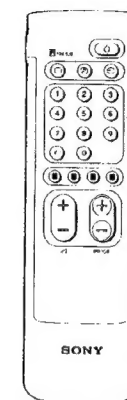


Symbol	Name	Refer to page
⏻	Main power switch	41, 48
⏻	Standby indicator	48
A-CD-B	Stereo A/B mode indicators	50
🎧	Headphones jack	59
📺 3, 📺 3, 📺 3	Input jacks (S video/video/audio)	59
P → ↗ → ↘ →	Function selector (Programme/volume/input)	48
↗ ↘	Adjustment buttons for function selector	48

### Scroll Commander RM-860



### Remote Commander RM-838



Simple side



Full-Function side

PAP operation

Menu operation

Video operation

Note  
The SAT button does not operate with this TV.

### TV/Teletext operation

Symbol	Name	Refer to Page
🔇	Muting on/off button	49
⏻	Standby button	48
📺	TV power on/TV mode selector button	48
📺	Teletext button	49
📺	Input mode selector	49
📺	Output mode selector	60
1,2,3,4,5,6,7,8,9 and 0	Number buttons	48
↵	Double-digit entering button	48
C	Direct channel entering button	47
↗ ↘	Volume control button	48
PROGR +/-	Programme selectors	48
📺	Teletext page access buttons	56
📺	Picture adjustment button	50
📺	Sound adjustment button	50
📺	On-screen display button	49
📺	Teletext hold button	56
📺	Time display button	49
📺	Fastext buttons	56
📺	»Freeze« button	49
📺	Button to change Screen Format	49

### PAP (Picture-and-picture) operation

Symbol	Name	Refer to Page
📺	PAP on / off button	53
📺	PAP source selector	53
📺	Swap button	53
📺	PAP freeze button	53

### Menu operation

Symbol	Name	Refer to Page
MENU	Menu on / off button	41
Δ+/-	Select buttons	41
OK	OK (confirming) button	41
←	Back button	41
↑/OK	Scroll Commander: Roller to select/confirm menu functions	41

### Video operation

Symbol	Name	Refer to Page
VTR1/2/3	Video equipment selector	61
MDP		
⏮ ⏪ ⏩ ⏭	Video equipment operation buttons	61
⏮ ⏪ ⏩ ⏭		
PROGR +/-		



## Step 1 – Connection

### 1 Connect the speakers

#### Notes:

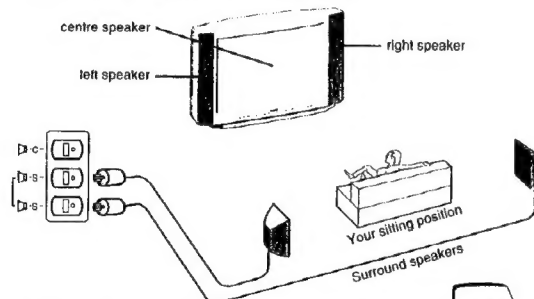
• Connect the speakers using the leads provided making sure to observe the following polarity: The striped lead is (+) and should be connected to the red terminal on the speaker. The black lead is (–) and should be connected to the black terminal on the speaker.

Dolby (\*) Pro Logic Surround requires normally 5 speakers, whose functions are as follows:  
**Centre speaker:** (incorporated in the TV set): to anchor the stable sound image, like dialogue, to the TV screen.  
**Left and Right front speakers:** for the normal two-channel stereo broadcasts.  
**Surround speakers:** for the special effects created by the surround channel.

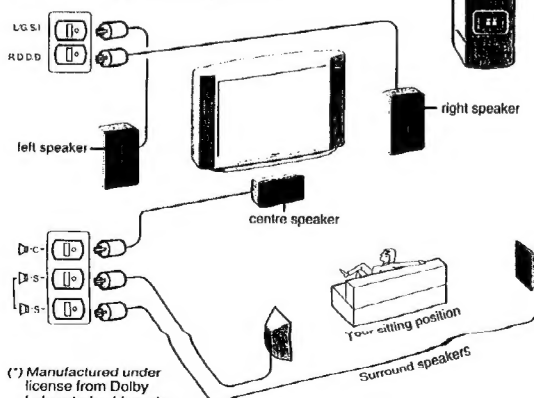
To obtain the full benefit of your Dolby Pro Logic Surround TV, the speakers should be positioned as shown below:

**Before switching on:** connect the speakers to the TV set.

#### a. Connect the speakers provided only:

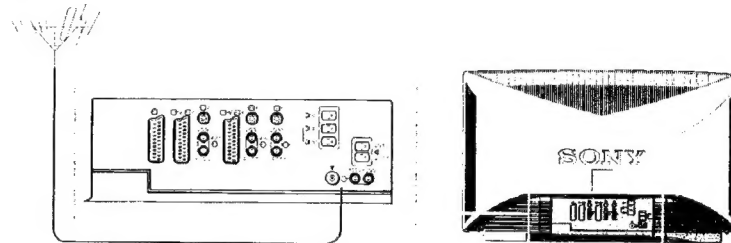


#### b. Connect your own speakers:



(\*) Manufactured under license from Dolby Laboratories Licensing Corporation. DOLBY, the double-D symbol and "PRO LOGIC" are trademarks of Dolby Laboratories Licensing Corporation.

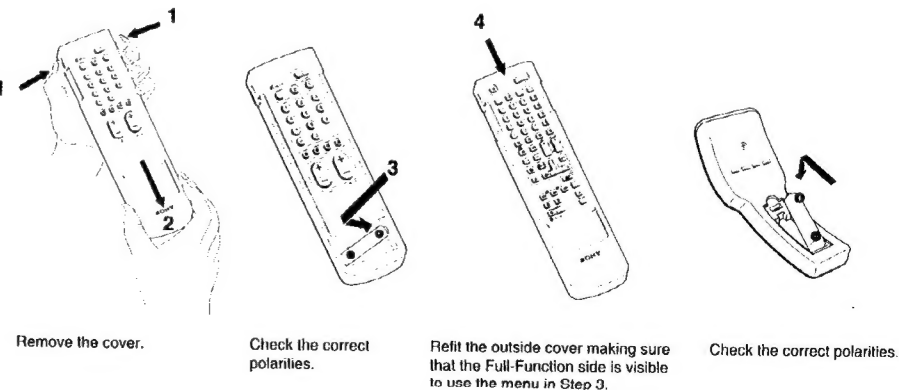
### 2 Connect the aerial



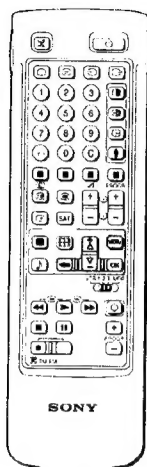
Fit an IEC aerial connector attached to 75-ohm coaxial cable (not supplied) to the 1F socket at the rear of the TV. Make sure to use an aerial cable corresponding to the relevant regulations.

## Step 2 – Preparation

### Insert the batteries into the Remote Commanders



## Step 3 Tuning in to TV Stations



Once you have set up the TV, you can choose the language of the menu. Then you should preset the channels (up to 100 channels) by choosing either the automatic or manual method.

The automatic method is easier if you want to preset all receivable channels at once. Use the manual method if you only have a few channels and want to preset channels one by one. The manual method is also convenient for allocating programme numbers to various video input sources.

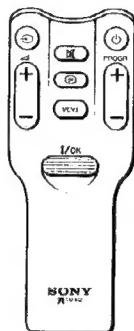
### Before you begin

- Check that the Full-Function side of the Remote Commander is visible.
- Locate Menu operation buttons on the Remote Commander. They are shaded in the illustration at the left.

### Easy Menu operation using the Scroll Commander

In addition to our double-sided Remote Commander, your TV set is supplied with an extra Remote Commander. The «Scroll Commander» works with a roller for convenient, fast-access operation of the menu functions.

Move the roller upwards to move the cursor upwards, move the roller downwards to move the cursor downwards, press the roller to confirm a selection. The other buttons on this commander have the same functions as the respective buttons on the double-sided Remote Commander.



## 1 Choose a language

- Depress on the TV.  
The TV will switch on. If the standby indicator on the TV is lit, press or a number button on the Remote Commander.
- Press the MENU button.  
The LANGUAGE menu appears. (See Fig. 1)
- Select the language you want with  $\Delta$  or  $\nabla$ — and press OK.

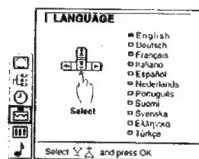


Fig. 1

## 2 Display the Menu

Press the MENU button twice.  
The main menu appears. (See Fig. 2)  
Using  $\Delta$  or  $\nabla$ — select the symbol and press OK.  
Now, choose one of the methods described overleaf:

or

»Preset Channels Manually«.

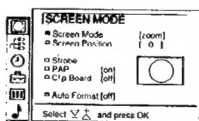


Fig. 2

To go back to main menu:  
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture:  
Press MENU. Normal TV picture will be restored after one minute if menu functions are not selected.

Note on the Demo function:  
If you choose Demo in the Installation menu, you can see a sequential demonstration of the menu functions. Press MENU to stop the function.

With this method, you can preset all receivable channels at once.

To stop automatic channel presetting:  
Press  $\leftarrow$  on the Remote Commander.

### Notes:

• After presetting the channels automatically, you can check which channels are stored on which programme positions. For details, see «Displaying the Programme Table» on page 49.

• You can sort the programme positions to have them appear on screen in the order you like. For details, see «Sorting Programme Positions» on page 44.

Note:  
Programme names are automatically taken from Teletext if available. If not, please refer to page 46 «Captioning a Station name» for more information.

Use this method if there are only a few channels in your area to preset or if you want to preset channels one by one. You may also allocate programme numbers to various video input sources.

If you have made a mistake:  
Press  $\leftarrow$  to go back to the previous position.  
To go back to main menu  
Keep pressing  $\leftarrow$ .  
To go back to the normal TV picture:  
Press MENU.

## 3 Preset channels automatically

- Select the symbol for «Preset» with  $\Delta$  or  $\nabla$ — and press OK.  
The PRESET menu appears. (See Fig. 3.)
- Select «Auto Programme» with  $\Delta$  or  $\nabla$ — and press OK.  
The AUTO PROGRAMME menu appears. (See Fig. 4)
- Press OK.  
Select if necessary the TV broadcast system (B/G for Western European or D/K for Eastern European countries) with  $\Delta$  or  $\nabla$ — and press OK. The first element of the «PROG» number will be highlighted.
- Select the programme (number button) from which you want to start presetting. Select the first element of the double-digit number with  $\Delta$  or  $\nabla$ — or the number buttons (e.g. For «04», select «0» here) and press OK.  
The second element of «PROG» will be highlighted.
- Select the second element of the double-digit number with  $\Delta$  or  $\nabla$ — or the number buttons (e.g. For «04», select «4» here) (See Fig. 5) and press OK.
- Select «C» or «S» with  $\Delta$  or  $\nabla$ — and press OK.  
The automatic channel presetting starts.  
When presetting is finished, the preset menu reappears. All available channels are now stored on successive number buttons. Press menu to restore normal TV picture.

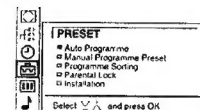


Fig. 3

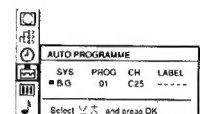


Fig. 4



Fig. 5

## 3 Preset channels manually

- Select the symbol for «Preset» with  $\Delta$  or  $\nabla$ — and press OK.  
The PRESET menu appears. (See Fig. 6)
- Select «Manual Programme Preset» with  $\Delta$  or  $\nabla$ — and press OK.  
The MANUAL PROGRAMME PRESET menu appears. (See Fig. 7)



Fig. 6

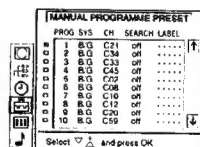


Fig. 7

**To tune in a channel by frequency:**  
After selecting F in step 6, enter three digits using the number buttons. Press OK.

- 3 Using  $\Delta$  + or  $\nabla$  -, select the programme position (number button) to which you want to preset a channel, and press OK.
- 4 Select, if necessary the TV broadcast system or a video input source (EXT) with  $\Delta$  + or  $\nabla$  -.
- 5 Then press OK. The CH position will be highlighted. (See Fig. 8)
- 6 Using  $\Delta$  + or  $\nabla$  -, select C (to preset a regular channel), S (cable channel) or F (to tune in by frequency) and press OK. The first element of the «CH» number will be highlighted. If you have selected EXT in step 5, select the video input source with  $\Delta$  + or  $\nabla$  -. (See Fig. 9)

There are two ways to preset channels. If you know the channel number, go to step »7-Manual«.

or

if you don't know the channel number, go to step »7- Search«.

#### 7 Manual

- a Select the first element of the «CH» number with  $\Delta$  + or  $\nabla$  - or the number buttons and press OK. The second element of the «CH» number will be highlighted.
- b Select the second element of the number with  $\Delta$  + or  $\nabla$  - or the number buttons. The selected number appears. (See Fig. 10)
- c Press OK. The «SEARCH» position is highlighted and the selected channel is now stored. (See Fig. 11)
- d Press OK until the cursor appears by the next programme position.
- e Repeat steps 3 to 7 to preset other channels.

#### 7 Search

- a Press OK repeatedly until the colour of the SEARCH position changes.
- b Start searching for the channel with  $\Delta$  + (up) or  $\nabla$  - (down). The CH position changes colour. (See Fig. 12) The CH number starts counting up or downwards. When a channel is found, it stops. (See Fig. 13)
- c Press OK if you want to store this channel. If not, press  $\Delta$  + or  $\nabla$  - to continue channel searching.
- d Press OK until the cursor appears by the next programme position.
- e Repeat steps 3 to 7 to preset other channels.

**If you have made a mistake:**  
Press  $\leftarrow$  to go back to the previous position.  
**To go back to main menu:**  
Keep pressing  $\leftarrow$ .  
**To go back to the normal TV picture:**  
Press MENU.



Fig. 8

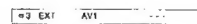


Fig. 9



Fig. 10

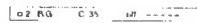


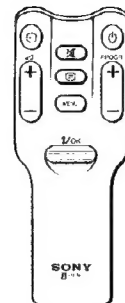
Fig. 11



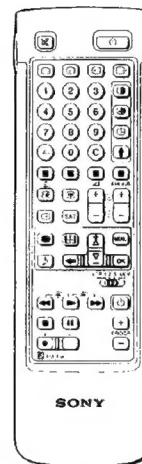
Fig. 12



Fig. 13



#### PROGRAMME SORTING



#### INSTALLATION

**For higher programme positions:**  
The display scrolls automatically.  
**If you have made a mistake:**  
Press  $\leftarrow$  to go back to the previous position.  
**To go back to main menu:**  
Keep pressing  $\leftarrow$ .  
**To go back to the normal TV picture:**  
Press MENU.

## Additional Presetting Functions

This section shows you additional presetting functions such as sorting or skipping programme positions, captioning a station name, manual fine-tuning, and using the parental lock.

#### Before you begin

- Check that the Full Function side of the Remote Commander is visible.
- Locate the Menu operation buttons.

### Sorting Programme Positions

With this function, you can sort the programme positions to a preferable order.

- 1 Press MENU to display the main menu.
- 2 Select the symbol for «Preset» with  $\Delta$  + or  $\nabla$  - and press OK. The PRESET menu appears.
- 3 Select «Programme Sorting» with  $\Delta$  + or  $\nabla$  - and press OK. The PROGRAMME SORTING menu appears. (See Fig. 14)
- 4 Using  $\Delta$  + or  $\nabla$  - select the programme position which you want to move to another and press OK. The colour of the selected position changes. (See Fig. 15)
- 5 Using  $\Delta$  + or  $\nabla$  - select the programme position to which you want to move the channel of the programme position selected in step 4 and press OK. Now the programme positions have been sorted. (See Fig. 16)
- 6 Repeat steps 4 and 5 to sort other programme positions.

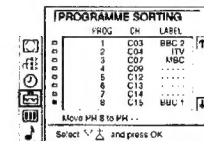
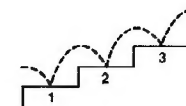


Fig. 14

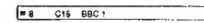


Fig. 15

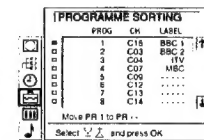


Fig. 16

### How to adjust the Picture Rotation

If due to the earth magnetism the picture «slants», you can use the function «Picture Rotation» to readjust the picture.

- 1 Press MENU to display the main menu.
- 2 Select the symbol for «Preset» with  $\Delta$  + or  $\nabla$  - and press OK. The PRESET menu appears.
- 3 Select «Installation» with  $\Delta$  + or  $\nabla$  - and press OK. The INSTALLATION menu appears.
- 4 Select «Picture Rotation» with  $\Delta$  + or  $\nabla$  - and press OK. The PICTURE ROTATION menu appears. (See Fig. 17)
- 5 Press OK. Adjust the picture rotation with  $\Delta$  + or  $\nabla$  - until you have an upright picture. As you press the cursor buttons, the range changes from -4 to +4.
- 6 Press OK to store the adjustment.

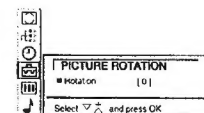



Fig. 17

## INSTALLATION

### Using »Further Programme Preset«

Using the menu »Further Programme Preset« you can

- in case of a strong local aerial signal (striped picture) attenuate the signal individually for each programme position (RF attenuator).
- individually adjust and store the volume level of each channel (Volume offset).
- in case of a strong sound signal (distorted sound), attenuate the sound signal for each programme position.
- use the manual line tuning to obtain a better picture reception, if the picture is distorted. Normally the AFT (automatic fine tuning) is operating.

- Press MENU to display the main menu.
- Select the symbol  for »Preset« with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
- Select »Installation« with  $\Delta$  or  $\nabla$  and press OK. The INSTALLATION menu appears.
- Select »Further Programme Preset« with  $\Delta$  or  $\nabla$  and press OK. The FURTHER PROGRAMME PRESET menu appears (See Fig. 18).
- Using  $\Delta$  or  $\nabla$  select the desired programme position and press OK once to select a) »ATT« (RF Attenuator), twice to select b) »VOL« (Volume offset), three times to select c) »IN-AMP« (Input Amplifier) or four times to select d) AFT (Automatic Fine Tuning). The selected item changes colour.

To adjust or change:

#### a) RF attenuator (ATT)

Using  $\Delta$  or  $\nabla$  select »On« for the selected programme position. Press OK to confirm the selection. Repeat step 5 to attenuate other programme positions.

#### b) Volume offset (VOL)

Using  $\Delta$  or  $\nabla$  you can adjust the volume level for the selected programme position within a range from -7 to +7. Press OK to store the volume level. Repeat step 5 to set the volume level for other programme positions.

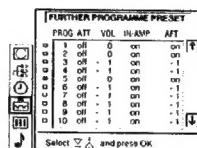
#### c) IN-AMP (input amplifier)

Using  $\Delta$  or  $\nabla$  select »Off« for the selected programme position. Press OK to confirm the selection. Repeat step 5 to switch off the input amplifier for other programme positions.

#### d) AFT

Using  $\Delta$  or  $\nabla$  you can fine-tune the channel within a range from -15 to +15. Press OK to store the fine-tuned level. Repeat step 5 to fine-tune the other channels.

- Press MENU to return to the normal TV mode.



PROG	ATT	VOL	IN-AMP	AFT
1	Off	0	On	On
2	On	0	On	On
3	On	1	On	-1
4	On	1	On	-1
5	On	0	On	On
6	On	1	On	On
7	On	1	On	-1
8	On	1	On	-1
9	On	1	On	-1
10	On	1	On	-1

Fig. 18

## MANUAL PROGRAMME PRESET

### MANUAL PROGRAMME PRESET

If you have made a mistake:

Press  $\leftarrow$  to go back to the previous position.


To go back to main menu:

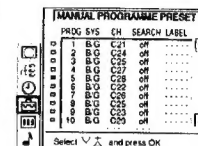
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture: Press MENU.

## Skipping Programme Positions

You can skip unused programme positions when selecting programmes with the PROGR +/- buttons. However, the skipped programmes may still be called up when you use the number buttons.

- Press MENU to display the main menu.
  - Select the symbol  for »Preset« with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
  - Select »Manual Programme Preset« with  $\Delta$  or  $\nabla$  and press OK. The MANUAL PROGRAMME PRESET menu appears. (See Fig. 19)
  - Using  $\Delta$  or  $\nabla$ , select the programme position which you want to skip and press OK. The »SYS« position changes colour.
  - Press  $\Delta$  or  $\nabla$  until »---« appears in the SYSTEM position. (See Fig. 20)
  - Press OK. (See Fig. 21)
- When you select programmes using the PROGR +/- buttons, the programme position will be skipped.
- Repeat steps 4 to 6 to skip other programme positions.

PROG	SYS	CH	SEARCH LABEL
1	B/G	C21	Off
2	B/G	C24	On
3	B/G	C25	Off
4	B/G	C27	On
5	B/G	C28	Off
6	B/G	C29	On
7	B/G	C29	Off
8	B/G	C25	On
9	B/G	C25	Off
10	B/G	C29	On

Fig. 19



3	---	---	---
---	-----	-----	-----

Fig. 20




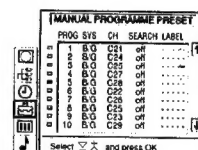
3	B/G	---	---
---	-----	-----	-----

Fig. 21

## Captioning a Station Name

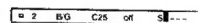
Programme names are usually automatically taken from Teletext if available. You can also »name« a channel or an input video source using up to five characters (letters or numbers) to be displayed on the TV screen (e.g. BBC1). Using this function, you can easily identify which channel or video source you are watching.

- Press MENU to display the main menu.
- Select the symbol  for »Preset« with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
- Select »Manual Programme Preset« with  $\Delta$  or  $\nabla$  and press OK. The MANUAL PROGRAMME PRESET menu appears. (See Fig. 22)
- Using  $\Delta$  or  $\nabla$ , select the programme position you want to caption and press OK repeatedly until the first element of the LABEL position is highlighted.
- Select a letter or number with  $\Delta$  or  $\nabla$  and press OK. The next element will be highlighted. Select other characters in the same way. If you want to leave an element blank, select - and press OK. (See Fig. 23)
- After selecting all the characters, press OK repeatedly until the cursor appears by the next programme position (at the left margin). Now the caption you chose is stored. (See Fig. 24)
- Repeat steps 5 and 6 to caption names for other channels.



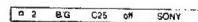
PROG	SYS	CH	SEARCH LABEL
1	B/G	C21	Off
2	B/G	C24	Off
3	B/G	C25	Off
4	B/G	C27	On
5	B/G	C28	Off
6	B/G	C29	On
7	B/G	C29	Off
8	B/G	C25	On
9	B/G	C25	Off
10	B/G	C29	On

Fig. 22



2	B/G	C25	Off
---	-----	-----	-----

Fig. 23



2	B/G	C25	Off
---	-----	-----	-----

Fig. 24



To reactivate AFT (Automatic Fine Tuning) Repeat from the beginning and select »ON« in step 5.

## PARENTAL LOCK


If you try to select a programme that has been blocked:  
The message  
"LOCKED" appears on  
the blank TV screen.

## Parental Lock

You can prevent undesirable broadcasts from appearing on the screen. We suggest you use this function to prevent children from watching programmes which you consider unsuitable.

- 1 Press MENU to display the main menu.
- 2 Select the symbol  for »Preset« with  $\Delta$  or  $\nabla$  and press OK. The PRESET menu appears.
- 3 Select »Parental Lock« with  $\Delta$  or  $\nabla$  and press OK. The PARENTAL LOCK menu appears. (See Fig. 25)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to block and press OK. The symbol  appears in front of the programme number indicating that this programme is now blocked. (See Fig. 26)
- 5 Repeat step 4 to block other programme positions.

### Cancelling blocking

- 1 On the PARENTAL LOCK menu, select the programme position you want to unblock with  $\Delta$  or  $\nabla$ .
- 2 Press OK. The symbol  disappears indicating that the blocking has been cancelled.

## Tuning in a Channel Temporarily

You can tune in a channel temporarily, even when it has not been preset. Use the buttons on the Full-Function side of the Remote Commander.

- 1 Press C on the Remote Commander. For cable channels, press C twice. The indication »C« (»S« for cable channels) appears on the screen.
- 2 Enter the double-digit channel number using the number buttons (e.g. for channel 4, first press 0, then 4). The channel appears. However, the channel will not be stored.

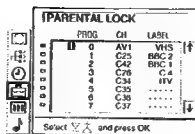
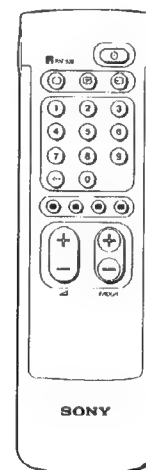




Fig. 25

PROG	CH	LABEL
0	AV1	VHS
1	C25	BBC 2
2	C42	BBC 1
3	C28	C 4
4	C34	HRV
5	C30	.....
6	C36	.....
7	C27	.....

Fig. 26



If no picture appears when you depress  on the TV and if the standby indicator on the TV is lit, the TV is in standby mode. Press  or one of the number buttons to switch it on.

# Operating Instructions

## Watching the TV

This section explains the basic functions you use while watching TV. Most of the operations can be done using the simple side of the Remote Commander.

### Switching the TV on and off

#### Switching on

Depress  on the TV.

#### Switching off temporarily

Press  on the Remote Commander.

The TV enters standby mode and the standby indicator on the front of the TV lights up.

#### To switch on again

Press , PROG  $\pm$ , or one of the number buttons on the Remote Commander.

#### Switching off completely

Depress  on the TV.

## Selecting TV Programmes

Press PROG  $\pm$  or the number buttons.

### To select a double-digit number

Press  $\pm$ , then the number.


For example, if you want to choose 23, press  $\pm$ , 2 and 3.


## Adjusting the Volume

Press  $\triangle/\nabla$ .

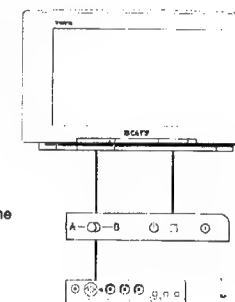
## Operating the TV Using the Buttons on the TV

- With the buttons on the TV, you can select programmes, adjust the volume, and select video input sources.

Press P  $\rightarrow$   button repeatedly until the programme

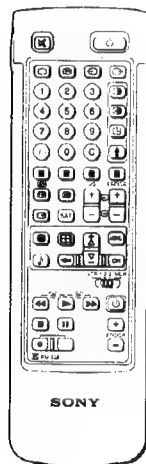
number,  $\triangle$  (for volume), or  (for video input picture) appears. Then adjust with the  $\pm$  buttons.

- Press  $\pm$  buttons to switch on the TV from the standby mode.
- Press  $\pm$  simultaneously to reset picture and sound controls to the factory preset level (RESET function).



For details of the teletext operation, refer to page 56.

For details of the video input picture, refer to page 60.



## Watching Teletext or Video Input

### Watching teletext

- Press **[T]** to view the teletext.
- Press three number buttons to select a page.
- Press one of the coloured buttons for fastest operation.
- Press **[PAGE +]** or **[PAGE -]** for the next or preceding page.
- To go back to the normal TV picture, press **[TV]**.

### Watching a video input picture

Press **[V]** repeatedly until the desired video input appears. To go back to the normal TV picture, press **[TV]**.

## More Convenient Functions

Use the Full-Function side of the Remote Commander.

### Displaying the on screen indications

- Press **[OSD]** once to display all the indications. They will disappear after some seconds.
- Press **[OSD]** twice to have the programme number and label stay on screen. Press twice again to make indications disappear.

### Muting the sound.

Press **[MUTE]**.

To resume normal sound, press **[MUTE]** again.

### Displaying the time

Press **[TIME]**. This function is available only when teletext is broadcast.

To make the time display disappear, press **[TIME]** again.

### Displaying the Programme Table

Press **[OK]**. A Programme Table will be displayed on the left side of the TV screen (See Fig.27).

### Selecting TV programmes

Press **[PROGR +/-]** or select the desired programme position using **[Δ+]** or **[▽-]** and press **[OK]**.

To make the Programme Table disappear, press **[MENU]**.

### Freezing the Picture

When watching the TV you have the possibility to «freeze» the picture. Press **[FREEZE]**. Press the button again to return to the normal TV picture.

### Changing the Screen format

Press **[FORMAT]** repeatedly to change the Screen mode as follows:

4:3 (4:3 picture)

→ Smart (imitation of 16:9 for 4:3 broadcast)

→ Zoom (imitation of 16:9 for movies broadcast in cinematographic format)

or

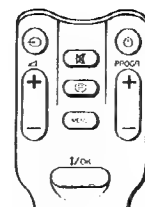
→ PALplus (for PALplus broadcast)

→ Wide (for 16:9 broadcast).

See also page 54 for more information.

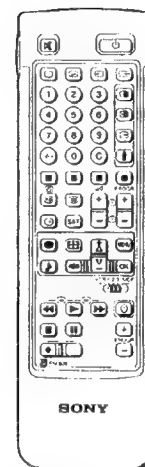
1	BBC
2	SAT
3	TV5
4	C22
5	C15
6	RTL
7	SVT
8	S34
9	AV1
10	MTV

Fig. 27



PICTURE CONTROL

SOUND CONTROL



**If you have made a mistake:**  
Press **[←]** to go back to the previous position.  
**To go back to the main menu:**  
Keep pressing **[←]**.  
**To go back to the normal TV picture:**  
Press **[MENU]**.

• Hall Surround and Dolby Pro Logic are not available via headphones.

**For setting the Balance**  
See page 51  
«Level settings»

**Note on LINE OUT:**  
The audio level and the dual sound mode output from the G+ jack on the rear correspond to the HEADPHONES VOLUME and DUAL SOUND settings.

**When watching a video input source with stereo sound:**  
You can select DUAL SOUND to change the sound.

# Adjusting and Setting the TV Using the Menu

## Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste. In addition, you can reduce the picture noise. You can also select dual sound (bilingual) programmes when available, adjust the sound for listening with the headphones (1). Also you have the possibility to adjust the sound to your individual taste using the Graphic Equalizer and special Sound effects.

- 1 Press **[P]** (for picture) or **[S]** (for sound) on the Remote Commander.  
or  
Press **[MENU]** and select the symbol **[P]** for Picture Control or **[S]** for Sound Control, then press **[OK]**.  
The PICTURE CONTROL or SOUND CONTROL menu appears. (See Fig. 28 or Fig. 29)
- 2 Using **[Δ+]** or **[▽-]**, select the item you want to adjust and press **[OK]**. The selected item changes colour. (See Fig. 30)
- 3 Adjust the setting with **[Δ+]** or **[▽-]** and press **[OK]**. The cursor appears beside the next item (at the left margin). (See Fig. 31)  
For the effect of each control, see the table below.
- 4 Repeat steps 2 and 3 to adjust other items.

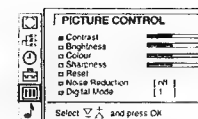


Fig. 28



Fig. 29



Fig. 31

Fig. 30

### Effect of each control

PICTURE CONTROL	Effect
Contrast	Less ——— More
Brightness	Darker ——— Brighter
Colour	Less ——— More
Hue (only for NTSC)	Greenish ——— Reddish
Sharpness	Softer ——— Sharper
Reset	Resets picture to the factory preset levels.
Noise Reduction	Off: Normal      on: Reduction of picture noise in case of weak signals
Digital Mode	1: Normal      2: LFR (Line Flicker Reduction) off

SOUND CONTROL	Effect
Graphic Equalizer	(See page 52 for more information)
Surround Mode	Off: Normal → Dolby → Hall —————
Hall Effect (only if «Hall» is on)	Choice between different hall effects Room → Dome → Arena —————
Dual Sound	A: left channel B: right channel Stereo Mono The selected mode of the A-B indicator on the TV lights up.
Headphones: Ω Volume	Less ——— More
Ω Dual Sound	A: channel 1 → B: channel 2 → PAP (if PAP is switched on you can select the PAP sound for the headphones)
	Stereo → Mono

## Dolby Pro Logic Set Up

With Dolby Pro Logic Surround you can experience »three dimensional« sound when receiving Dolby Surround encoded programmes.

This menu enables you to adapt the Dolby Pro Logic Surround features to your individual requirements.

### Adjusting the sound level of the speakers


Dolby Pro Logic uses 4 sound channels to supply 5 speakers:

Left and Right: Left and right TV speakers

Centre: Centre speaker for dialogues

Surround: Surround speakers for surround sound effect

Using »Level Settings« a noise generator enables you to adjust the sound levels of the speakers to your individual listening position. From your listening position all sound levels should be the same.

- 1 Press MENU, select the symbol  on the screen for »Preset« and press OK. Then select »Installation« and »Dolby Pro Logic Set Up« using  $\Delta$  or  $\nabla$  and press OK. The DOLBY PRO LOGIC SET UP menu appears. (See Fig. 32)
- 2 Press OK. The cursor moves to L (sound level of the left speaker) (See Fig. 33) and you hear a test tone from the left speaker.
- 3
  - a) To change the level: Press OK and adjust the highlighted bar by pressing  $\Delta$  or  $\nabla$  repeatedly. Press OK to confirm the adjustment.
  - or
  - b) To go on the next bar: Press  $\Delta$  or  $\nabla$  to select Centre, Right or Surround. Adjust using step 3a).
- 4 Repeat steps 3a and b to adjust all sound levels.
- 5 Press  $\leftarrow$  to exit »Level Settings« and Menu to return to the normal TV screen.

### Setting Speaker Mode and Delay Time

- 1 Using  $\Delta$  or  $\nabla$  select »Dolby Pro Logic Set Up« in the Installation menu and press OK.
- 2 Press  $\nabla$  to select »Speaker Mode« and press OK. Using  $\Delta$  or  $\nabla$  select
 

Normal: If all speakers are activated  
Phantom: If the centre speaker is not used  
3 stereo: If the surround speakers are not used


 Press OK to confirm your selection.
- 3 Press  $\nabla$  to select »Delay Time« and press OK. You can select a time delay for the sound of the surround speakers which depends on your room size (e.g. 20ms for standard rooms, 30 ms for small rooms)  
15 ms  $\Rightarrow$  20 ms  $\Rightarrow$  25 ms  $\Rightarrow$  30 ms  

 Press OK to confirm your selection.
- 4 Press MENU to return to the normal TV screen.



Fig. 32

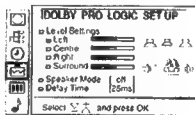


Fig. 33

**Note:** The modifications made in »USER« mode will be stored. All other settings are reset to factory-set level when you change to another mode.

## Graphic Equalizer

Using this function you can individually adjust the sound by cutting and boosting selected frequencies. You can also select between the following modes:

Flat  $\Rightarrow$  Pop  $\Rightarrow$  Rock  $\Rightarrow$  Jazz  $\Rightarrow$  Vocal  $\Rightarrow$  User

- 1 Select »Sound Control« in the main menu, then select »Graphic Equalizer« using  $\Delta$  or  $\nabla$  and press OK. The GRAPHIC EQUALIZER menu appears (See Fig. 34).
- 2 Press OK. The colour of »Mode« changes. Select the desired mode with  $\Delta$  or  $\nabla$  and press OK.
- 3 If you want to modify a mode, select the desired bar of a frequency band using  $\Delta$  or  $\nabla$  and press OK. The selected frequency changes colour. Using  $\Delta$  or  $\nabla$  adjust the level of frequency and press OK. In this way you can adjust all 5 graphic bars.
- 4 Press MENU to return to the normal TV mode.

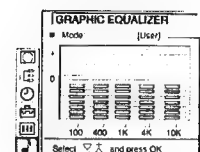


Fig. 34

Flat  
Pop  
Rock  
Jazz  
Vocal  
User

## Preset Dolby Pro Logic

To enjoy programmes encoded in Dolby Surround sound, switch on »Dolby Pro Logic« in the sound menu.

- 1 Press  $\mathcal{D}$  on the Remote Commander. The SOUND CONTROL menu appears.
- 2 Using  $\Delta$  or  $\nabla$  select »Surround Mode« and press OK.
- 3 Using  $\Delta$  or  $\nabla$  select »Dolby« and press OK.

After the end of the broadcast make sure to return the setting to »OFF«.

## TIMER


**To switch off the timer:**  
Select »OFF« in step 3.

**To check the remaining time:**  
Press  $\mathcal{D}$ .

**To go back to the normal TV picture:**  
Press MENU.

## Using the Sleep Timer

You can select a time period after which the TV automatically switches into standby mode.

- 1 Using  $\Delta$  or  $\nabla$  select the symbol  $\mathcal{D}$  for »Timer« and press OK. The TIMER menu appears (see Fig. 35).
- 2 Press OK. The time period option changes colour.
- 3 Select the time period with  $\Delta$  or  $\nabla$ . The time period (in minutes) changes as follows:  
10  $\rightarrow$  20  $\rightarrow$  30  $\rightarrow$  40  $\rightarrow$  50  $\rightarrow$  60  $\rightarrow$  70  $\rightarrow$  80  $\rightarrow$  90  

- 4 After selecting the time period, press OK. The cursor moves back to the left margin and the timer starts counting. One minute before the TV switches into standby mode, a message is displayed on the screen.

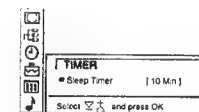
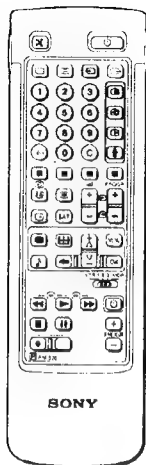


Fig. 35

# PAP (Picture and Picture)



With this function you can display two screens at the same time. In this way you can watch two TV programmes at the same time. Also you can watch or monitor the video output from any connected equipment (for example from a VCR) while watching TV or vice versa. For information about connection of other equipment, refer to page 59.



## Switching PAP on and off

Press **[PAP]** to display the screens in 8:9 format.  
Press **[PAP]** twice to display the screens in 4:3 format.  
The PAP screen will be displayed next to the main TV screen.  
The PAP screen will come from the source chosen when the TV was last used.

**To switch PAP off**  
Press **[PAP]** repeatedly.

## Selecting a PAP source

Press **[PAP]**.  
The symbol **[PAP]** will be displayed at the bottom, left-hand corner of the screen.  
Press **PROGR +/-**, the number buttons or **[PAP]** to select the desired source for the PAP screen.

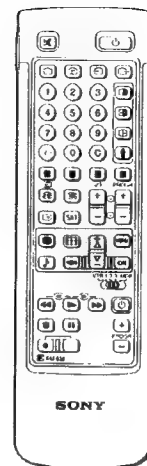
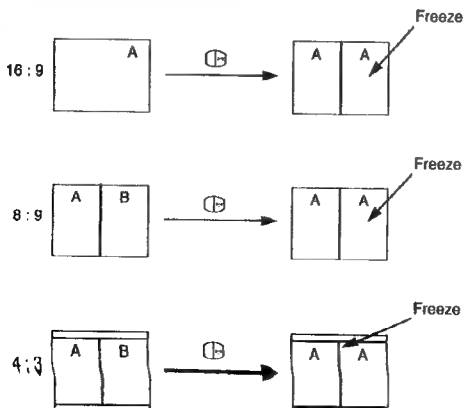
## Swapping screens

Press **[PAP]**.  
The main screen will switch the picture with the PAP screen.



## Freezing the picture

You have the possibility to «freeze» the picture of the PAP screen. Press **[PAP]** once to freeze and twice to return to the normal screen.



## Operating Screen Mode/PAP using the Menu

Using the Screen Mode menu you have the possibility to change the aspect ratio for the TV display for wide screen effects, operate the PAP Mode, preset Auto Pal plus or reproduce the main picture image by image (Strobe function).

- 1 Press **MENU** to display the main menu.
- 2 Select the symbol **[Screen Mode]** for «Screen Mode» with **Δ+** or **∇-** and press **OK**. The **SCREEN MODE** menu appears (See Fig. 36).

You have the choice among the following modes:

- 4:3: for normal ratio 4:3 (See Fig. 37).
- Smart: imitation of wide screen effect (16:9) for 4:3 broadcasts (See Fig. 38).
- Zoom: imitation of wide screen effect (16:9) for movies broadcast in cinemascopic format (See Fig. 39).
- or
- PAL plus: for PAL plus broadcasts.
- Wide: for 16:9 broadcasts (See Fig. 40).

- a) **Changing the Screen position (only for Zoom mode)**  
When using the Zoom mode part of the picture at the top and bottom will be cut off. With the help of the function «Screen position» you can move the screen up- or downwards in order to see the cut-off part of the screen (e.g. to read the subtitles).

Using **Δ+** or **∇-** select «Screen position» and press **OK**. The selected item changes colour. Using **Δ+** or **∇-** adjust the screen position and press **OK**.

- b) **Strobe Mode**  
Using **Δ+** or **∇-** select «Strobe» and press **OK**. Now the TV picture is displayed image by image, creating a slow motion effect (See Fig. 41). Using **Δ+** or **∇-** select the speed of the motion (3 different speeds are available). Press **OK** to return to the normal TV mode.

- c) **Switching PAP on and off**  
Using **Δ+** or **∇-** select «PAP» and press **OK**. Using **Δ+** or **∇-** select «1» to display the PAP screen in 8:9 format, «2» for 4:3 format and «OFF» to switch it off and press **OK**.

- d) **Freezing the PAP screen**  
Using **Δ+** or **∇-** select «Clip Board» and press **OK**. Using **Δ+** or **∇-** select «On» to freeze the PAP screen and «Off» to restore the normal picture.

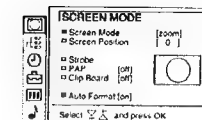


Fig. 36

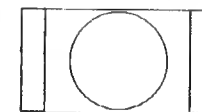


Fig. 37

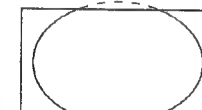


Fig. 38

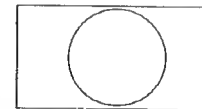


Fig. 39



Fig. 40

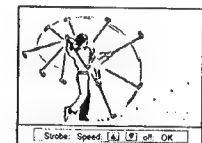
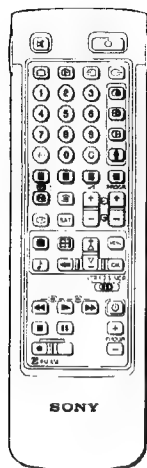
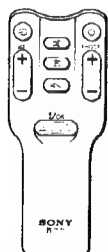


Fig. 41

# Teletext



**Notes:**  
• Teletext errors may occur if the broadcasting signals are weak.



**Note:**  
Fasttext operation is only possible, if the TV station broadcasts Fasttext signals.

TV stations broadcast an information service called Teletext via the TV channels. Teletext service allows you to receive various information pages such as weather reports or news at any time you want. For advanced teletext operation, use the buttons on the Full-Function side of the Remote Commander.

## Direct Access Functions

### Switching Teletext on and off

- 1 Select the TV channel which carries the teletext broadcast you want to watch.
- 2 Press **[MENU]** to switch on teletext.  
A teletext page will be displayed (usually the index page). If there is no teletext broadcast, "No text available" is displayed on the information line at the top of the screen.

**To switch teletext off**  
Press **[OFF]**.

### Selecting a teletext page

#### With direct page selection

Use the number buttons to input the three digits of the chosen page number.  
If you have made a mistake, type in any three digits. Then re-enter the correct page number.

#### With page-catching

- 1 Select a teletext page with a page overview (e.g. index page).
- 2 Press **[OK]**. Using **[Δ+]** or **[▽-]**, select the desired page. "Page Catching" will be displayed on the information line. Press **[OK]**. The requested page will appear in a few seconds.

Press **[MENU]** to resume normal teletext reception.

### Accessing the next or preceding page

Press **[PAGE +]** or **[PAGE -]**.  
The next or preceding page appears.

### Superimposing the teletext display on the TV programme

- Press **[MENU]** once in teletext mode or twice in TV mode.
- Press **[MENU]** again to resume normal teletext reception.

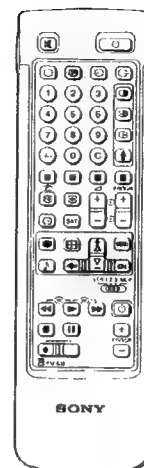
### Preventing a teletext page from being updated

- Press **[HOLD]**. The HOLD symbol "H" is displayed on the information line.
- Press **[MENU]** to resume normal teletext reception.

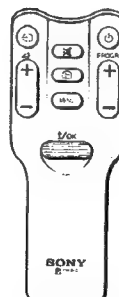
### Using Fasttext

With Fasttext you can access pages with one key stroke. When a Fasttext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons on the Remote Commander.

Press the corresponding coloured button on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed after some seconds.



**Note:**  
Some of the features may not be available depending on the Teletext service.



**To cancel the request:**  
Select "OFF" for the TIME PAGE setting.

## Using the Teletext Menu

This TV is provided with a menu-guided teletext system. When teletext is switched on, you can use the menu buttons to operate the teletext menu. Select the teletext menu functions in the following way:

- 1 Press **[MENU]**. The menu will be superimposed on the teletext display. (See Fig. 42).
- 2 Using **[Δ+]** or **[▽-]**, select the teletext function you want and press **[OK]**. (See Fig. 43).

### USER PAGES/PRESET USER PAGES

See page 58 for information about presetting and operating the user pages.

### INDEX

The index will give you an overview of the contents of the teletext and the page numbers.

### TOP/BOTTOM/FULL

For convenient reading of a teletext page, you can enlarge the teletext display with the ability to scroll up and down the screen. After having selected the function, an information line Top/Bottom/Full will be displayed. (See Fig. 44).

Press **[Δ+]** for "Top" to enlarge the upper half. For "Bottom" keep pressing **[▽-]**, to enlarge the lower half. Press **[OK]** for "Full" to resume the normal size.

Press **[MENU]** to resume normal teletext reception.

### TEXT CLEAR

After having selected the function, you can watch a TV programme while waiting for a requested teletext page to be captured (The symbol changes colour) (See Fig. 45). Press **[MENU]** to view the requested page.

### SUBTITLES

Your teletext service will inform you if a TV programme is subtitled. After having selected the function the subtitles will be displayed.

### REVEAL

Sometimes pages contain concealed information, such as answers to a quiz. The reveal option lets you disclose the information. After having selected the function, an information line "REVEAL ON/OFF" will be displayed. (See Fig. 46).

Using **[Δ+]** or **[▽-]**, select ON to reveal the information or OFF to conceal it again.

Press **[MENU]** to resume normal teletext reception.

### TIME PAGE

Your teletext service will inform you, if a time coded page is available. You may have a page (e.g. an alarm page) displayed at a certain time.

- 1 Press **[OK]**. An information window will be displayed at the bottom of the page. Using **[Δ+]** or **[▽-]** select ON and press **[OK]**.
- 2 To select the desired page, enter the three digits of the page number (e.g. 301) using the number buttons.
- 3 To select the time, enter four digits for the desired time (e.g. 1800) using the number buttons. Press **[MENU]**. The selected time is displayed at the top in the left-hand corner. At the requested time, the page will be displayed. Press **[MENU]** to resume normal teletext mode.



Fig. 42

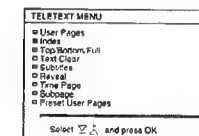


Fig. 43



Fig. 44

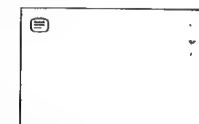


Fig. 45

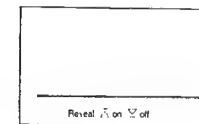


Fig. 46

To cancel the request:  
Select «Subpage» and press OK.

## SUBPAGE

You may want to select a particular teletext page from several subpages which are rotated automatically. After having selected the function, an information line will be displayed. To select the desired subpage, enter four digits using PROG+/- or the number buttons. (e.g. enter 0002 for the second page of a sequence).

## User Page Bank System

You can store up to 30 pages in the «Teletext page bank system». In this way you have quick access to the pages you watch frequently.

### Storing pages

- There are 5 «banks» (A to E) for 5 teletext stations. In each bank you can store 6 preferred pages (P1 to P6).
- Press (if Teletext is not on already) and MENU to show the TELETEXT MENU display.
  - Select PRESET USER PAGES with  $\Delta$  or  $\nabla$  and press OK.
  - Select the desired bank with  $\Delta$  or  $\nabla$  and press OK. The cursor will go to the first position (P1) of the preferred pages.
  - Input the three digits of your first preferred page with the number buttons and press OK. The cursor will go to the second position.
  - Repeat step 4 for the other 5 page numbers you want to preset. If you do not want to preset all 6 page numbers available, press OK without inserting any number. After having finished the presetting press OK repeatedly until the cursor appears besides the next bank at the left margin.
  - Select Allocate Bank with  $\Delta$  or  $\nabla$  and press OK.
  - Select the programme position for which you have preset pages with  $\Delta$  or  $\nabla$  and press OK. (See Fig. 47)
  - Select the desired bank with  $\Delta$  or  $\nabla$  (Banks A to E are available) and press OK.
  - Repeat steps 3 to 8 for the other 4 banks available.

### Displaying User Pages

- Select MENU.
- Select User Pages with  $\Delta$  or  $\nabla$  and press OK. A table of the stored preferred pages will be displayed. (See Fig. 48)
- Select the desired page with  $\Delta$  or  $\nabla$  and press OK. The page will be displayed after some seconds.

or

You can use the coloured buttons on the Remote Commander to have quick access to the first four User pages. Page 1 corresponds to the red button, P 2 to the green one, P 3 to the yellow one and P 4 to the blue button. To select the desired page press the respective coloured button while you are in TV mode. Now the Page number of this teletext page will appear in white at the top in the left-handed corner of the TV screen. When the page number changes colour, the page is available. Press the coloured button again to display the page.

BANK	P1	P2	P3	P4	P5	P6
A	300	255	456	234	200	179
B	200	120	301	303	550	345
C	100	200	300	444		
D	158	221	255			
E	400	538	210	118	127	

Absolute Bank	PROG	LABEL	BANK	PROG	LABEL	BANK
00	VHS	-	04	MTV	D	
01	SBC1	A	05	SKY	B	
02	SBC2	C	06	ITV	C	

Select  $\nabla$  and press OK

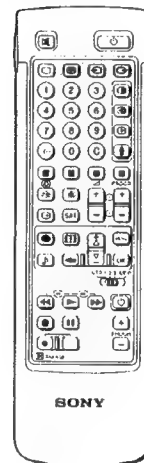
Fig. 47

PAGE	200	200	203	500	234	158

Select  $\nabla$  and press OK

Fig. 48

Selecting input with PROG +/- or number buttons:  
You can preset video input sources to the programme positions so that you can select them with PROG +/- or number buttons. For details, see «Preset channels manually» on page 41.



## Selecting input and output

This section explains how to view the video input picture (of the video source connected to your TV), and how to select the output signal using direct access buttons or the menu system.

### Selecting input

Press repeatedly to select the input source. The symbol of the selected input source will appear.

To go back to the normal TV picture Press .

### Input modes

Symbol	Input signal
	1 Audio/video input through the 1 connector
	RGB input through the 1 connector
	2 Audio/video input through the 2/-32 connector
	2 S video input through the 2/-32 connector
	3 Audio/video input through 3 and 3 connectors at the front
	3 S video input through the 3 connectors (4-pin connector) at the front
	4 Audio/video input through the 4/-44 connector
	4 S video input through the 4/-44 or 44 connector (4-pin connector)

### Selecting the output

The 2/-32 connector outputs the source input from the other connectors.

Press repeatedly to select the output. The symbol of the selected output source appears.

### Output modes

Symbol	2/-32 connector outputs
1	The audio/video signal from the 1 connector
2	The audio/video signal from the 2/-32 connector
2	The audio/video signal from the 2/-32 connector
3	The audio/video signal from the 3, 3 connectors
3	The audio/video signal from the 3, 3 connectors
4	The audio/video signal from the 4/-44 connector
4	The audio/video signal from the 4/-44 connector
TV	The audio/video signal from the TV aerial terminal

## Using AV Preset

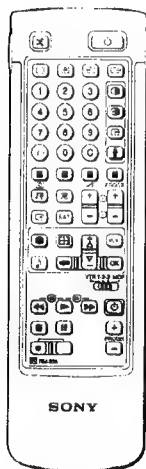
Using this function you can preset the desired input source (e.g. 1, RGB signal) to the respective AV input (AV 1-4). In this way a connected VTR will automatically switch to the RGB signal.

- Select the symbol for «Preset» with  $\Delta$  or  $\nabla$  and press OK.
- Select first «Installation», then «AV Preset» with  $\Delta$  or  $\nabla$  and press OK. The AV PRESET menu appears (See Fig. 49).
- Select the desired AV input with  $\Delta$  or  $\nabla$  and press OK.

AV-INPUT	SOURCE	LABEL	PAL
	RGB	RGB	ON
	Y/C	YC2	ON
	Y/C	YC2	ON
	Y/C	YC7	ON

Select  $\nabla$  and press OK

Fig. 49



**When recording**  
When you use the **RECORD** button, make sure to press this button and the one to the right of it simultaneously.

- Select the desired source with  $\Delta$  or  $\nabla$  and press OK.  
For the respective AV inputs you have the following possibilities:

AV 1	RGB or AV	AV 3	YC3 or AV
AV 2	YC2 or AV	AV 4	YC or AV

- If you want to name the AV input select «Label» using  $\Delta$  or  $\nabla$  and press OK. Select a letter or a number with  $\Delta$  or  $\nabla$  and press OK. The next element will be highlighted. Select other characters in the same way. If you want to leave an element blank, select — and press OK.  
After having selected all the characters, press OK repeatedly until the cursor appears by the next AV input at the left margin.
- If you want to preset PAL plus selection for AV input, select PAL + with  $\Delta$  or  $\nabla$  and press OK.  
Using  $\Delta$  or  $\nabla$  select «On» if PAL plus should be selected automatically, or «Off» if not. Press OK to confirm the selection.
- Repeat steps 3 to 6 for the other AV inputs.

#### Checking and selecting the input and output sources using the menu

You can display the menu to see which input sources are selected for the TV screen and PAP screen, and which output source is selected. You can also select them on the menu display.

- Select the symbol for «Video Connection» with  $\Delta$  or  $\nabla$  and press OK. The VIDEO CONNECTION menu appears. (See Fig. 50)

You can see which source is selected for the TV and PAP input, and for the output. If you want to select the input and output on this menu, go on to the next step.

- Select TV Screen (input source for the TV screen), PAP (input source for the PAP screen), or output (output source) with  $\Delta$  or  $\nabla$  and press OK. One of the source items changes colour.
- Select the desired source with  $\Delta$  or  $\nabla$ .  
For details about each source, see the table on page 60.
- Press OK.  
The selected source is confirmed, and the cursor appears.
- Repeat steps 2 to 4 to select the source for other inputs or outputs.

### Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control other Sony remote-controlled video equipment. The buttons for video operation have been factory-set to control most of Sony video equipment, such as: Beta, 8mm or VHS VCRs or video disc players.

#### Tuning the Remote Commander to the equipment

- Set the VTR 1/2/3 MDP selector according to the equipment you want to control:  
VTR 1: Beta VCR  
VTR 2: 8mm VCR  
VTR 3: VHS VCR  
MDP: Video disc player
- Use the buttons indicated in the illustration to operate the additional equipment.

If your video equipment is furnished with a COMMAND MODE selector: set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.

If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

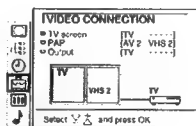


Fig. 50

## For Your Information

### Troubleshooting

Here are some simple solutions to problems which may affect the picture and sound.

Problem	Solution
No picture (screen is dark), no sound	<ul style="list-style-type: none"> <li>• Plug the TV in.</li> <li>• Press  on the TV. (If  indicator is on, press  or a programme number on the Remote Commander.)</li> <li>• Check the aerial connection.</li> <li>• Check if the selected video source is on.</li> <li>• Turn the TV off for 3 or 4 seconds and then turn it on again using .</li> </ul>
Poor or no picture (screen is dark), but good sound	<ul style="list-style-type: none"> <li>• Press  to enter the PICTURE CONTROL menu and adjust «Brightness», «Contrast» and «Colour».</li> </ul>
Poor picture quality when watching an RGB video source	<ul style="list-style-type: none"> <li>• Press  repeatedly to select .</li> </ul>
Poor picture quality of PAP screen	<ul style="list-style-type: none"> <li>• Press .</li> </ul>
Good picture but poor or no sound	<ul style="list-style-type: none"> <li>• Press  +.</li> <li>• If  is displayed on the screen, press .</li> <li>• Check the connections of the loudspeakers.</li> </ul>
No colour for colour programmes	<ul style="list-style-type: none"> <li>• Press  to enter the PICTURE CONTROL menu, select RESET, then press OK.</li> </ul>
Remote Commander does not function.	<ul style="list-style-type: none"> <li>• Replace batteries.</li> </ul>

If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.

### Auto PAL plus

PAL plus is a new broadcasting system with the following features:

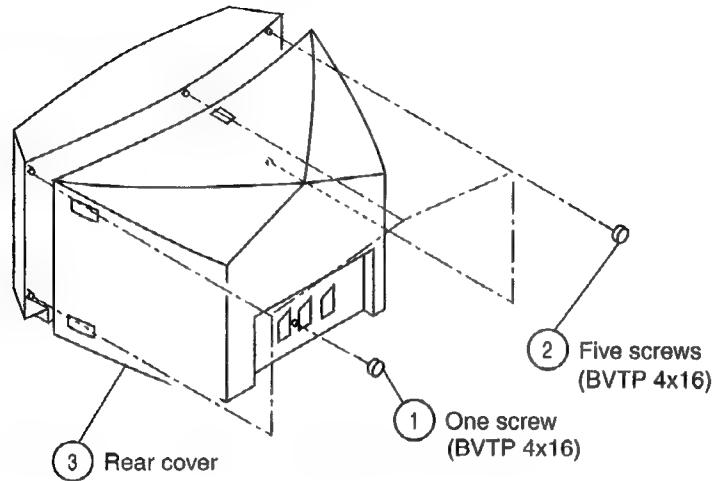
- Backward compatibility to the PAL standard
- Broadcasting in 16:9 format
- Improved video signal quality (The resolution is 576 lines against 432 lines in conventional 16:9 programmes)

If you preset AUTO PAL plus to ON and the PAL plus signal is being transmitted, the screen mode automatically changes from any mode to the PAL plus mode (See page 52). When the PAL plus programme is finished, the screen mode automatically returns to the previous mode.

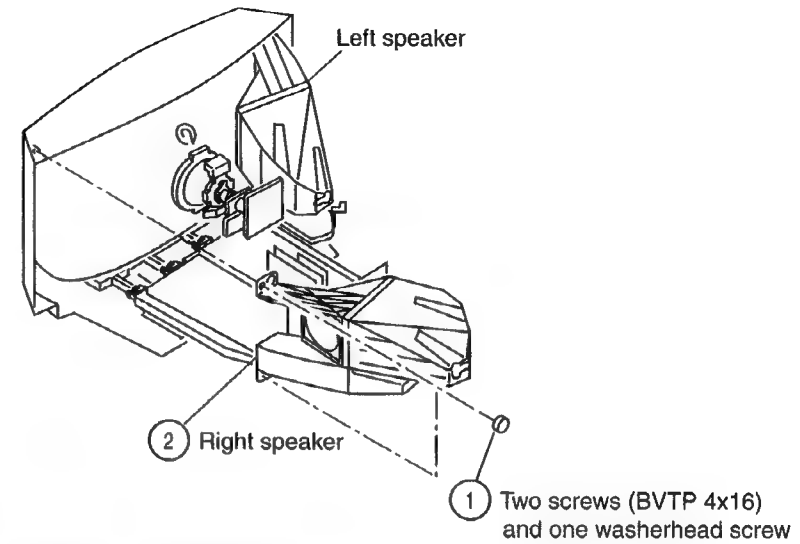
- Press MENU to display the main menu.
- Select the symbol for «Screen Mode» with  $\Delta$  or  $\nabla$  and press OK. The SCREEN MODE menu appears.
- Select «Auto Format» with  $\Delta$  or  $\nabla$  and press OK.
- Select ON or OFF with  $\Delta$  or  $\nabla$  and press OK.

## SECTION 2 DISASSEMBLY

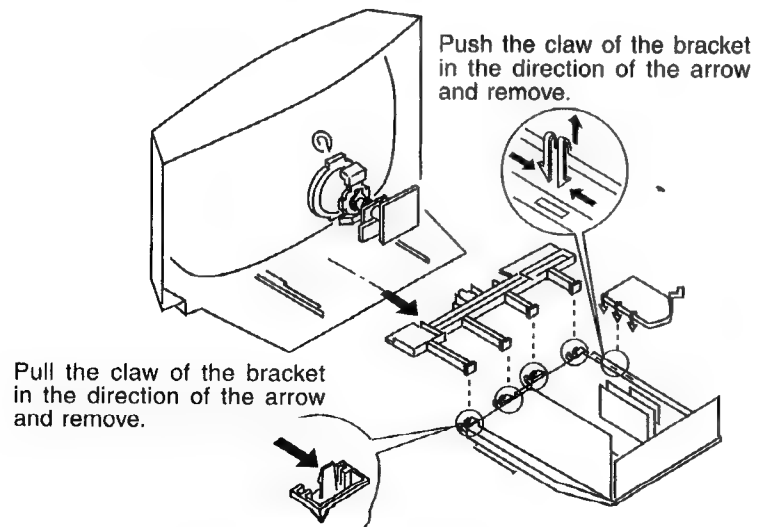
### 2-1. REAR COVER REMOVAL



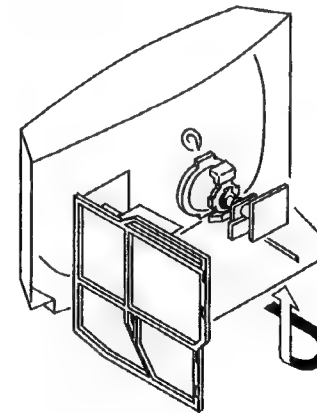
### 2-2. SPEAKER REMOVAL



### 2-3. CHASSIS ASSY, H AND T BRACKET REMOVAL

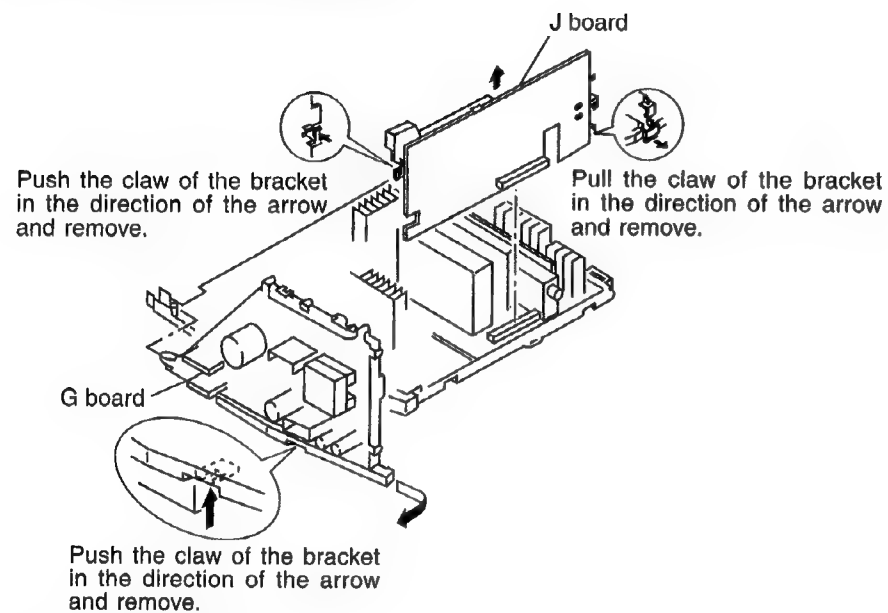


### 2-4. SERVICE POSITION

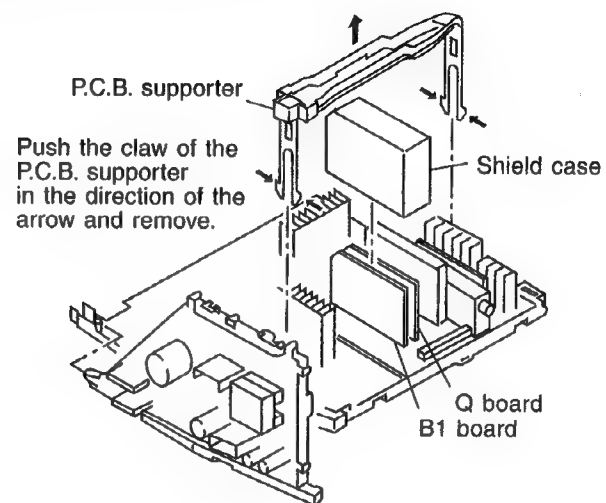


## SECTION 2 DISASSEMBLY

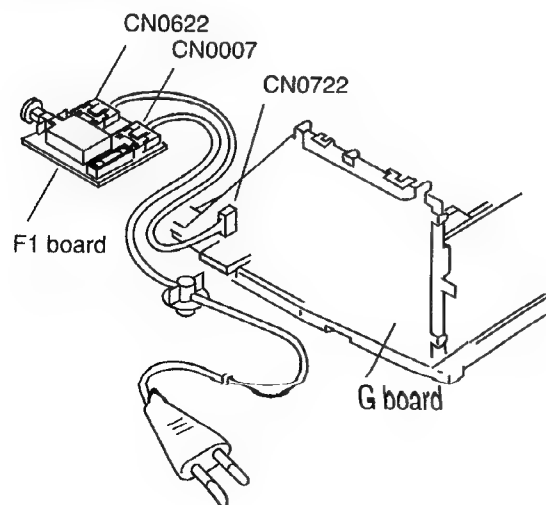
### 2-5. G AND J BOARD REMOVAL



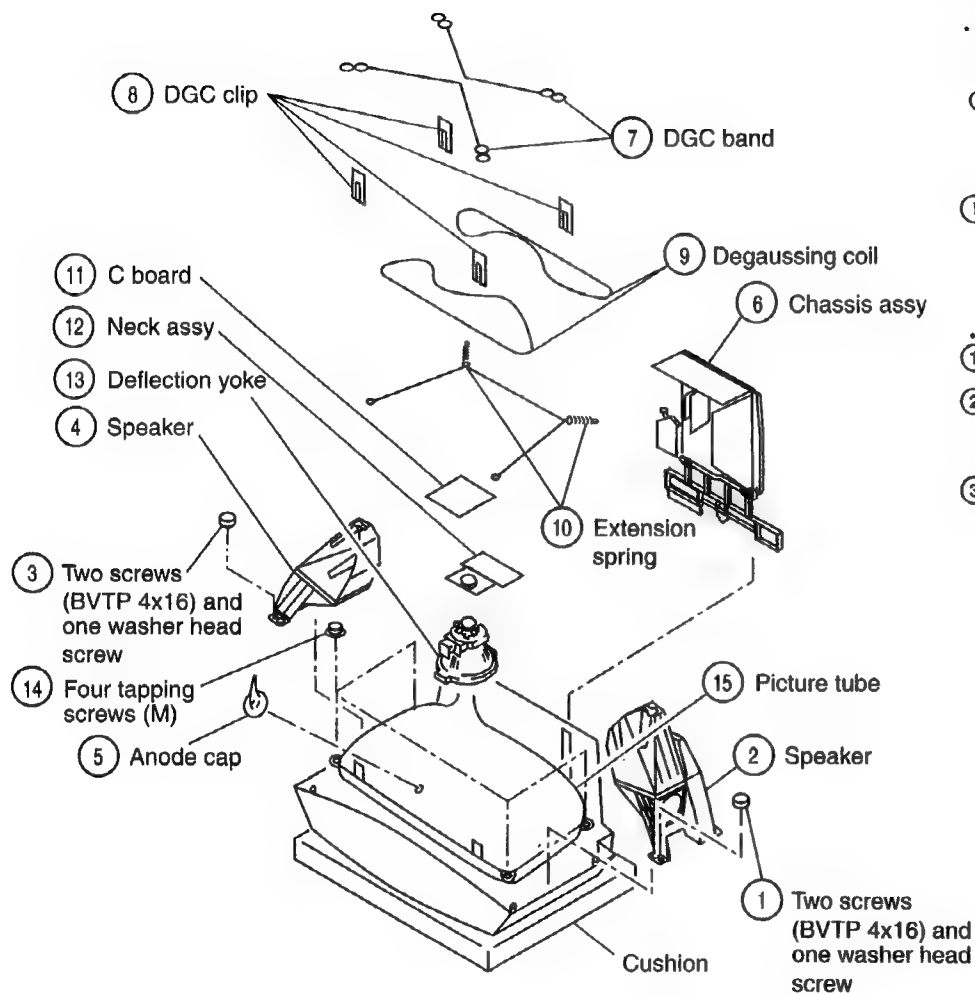
### 2-6. B1 AND Q BOARD REMOVAL (KV-28WS3A, D, E, K and U only)



### 2-7. WIRE DRESSING



## 2-8. PICTURE TUBE REMOVAL



## • REMOVAL OF ANODE-CAP

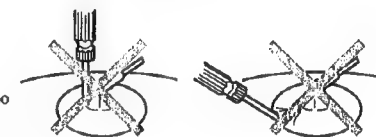
**Note :** Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

### • REMOVING PROCEDURES.

- 1 Turn up one side of the rubber cap in the direction indicated by the arrow (a)
- 2 Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)
- 3 When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

### • HOW TO HANDLE AN ANODE-CAP

- 1 Don't damage the surface of anode-cap with sharp shaped material !
- 2 Don't press the rubber hardly not to hurt inside of anode-caps !  
A metal fitting called as shatter-hook terminal is built into the rubber.
- 3 Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or damage the rubber.



## SECTION 3

### SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustment with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches as follows.

Contrast ..... normal  
 Brightness ..... normal

- Carry out the following adjustments in this order:

- 3-1. Beam landing
- 3-2. Convergence
- 3-3. Focus
- 3-4. White balance

Note: Testing equipment required.

1. Colour bar/pattern generator
2. Degausser
3. Vector scope

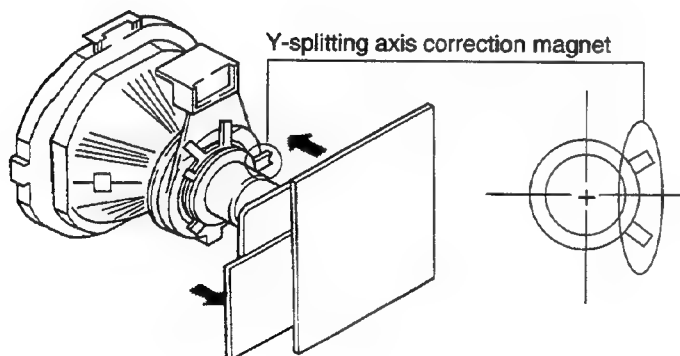
### 3-1. BEAM LANDING

#### Preparation:

1. In order to reduce the influence of geomagnetism on the set's picture tube face it in an easterly or westerly direction.
2. Switch on the set's power and degauss with the degausser.

#### (1) Adjustment of Correction Magnet for Y-Splitting Axis

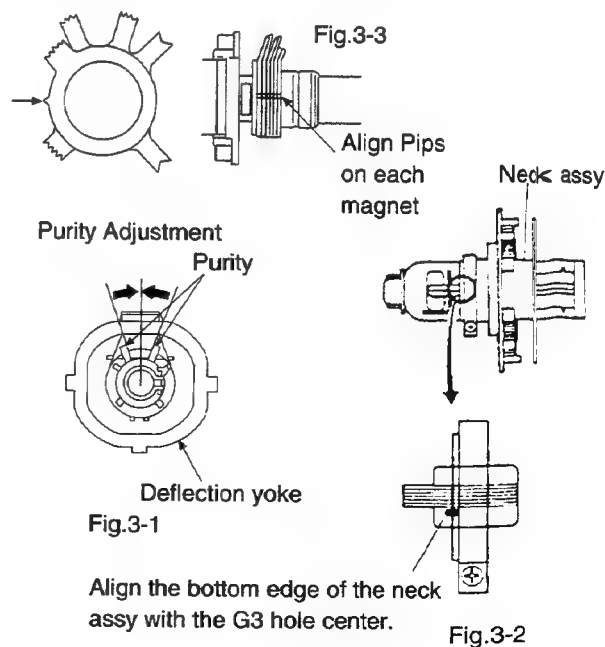
1. Input a crosshatch signal from the pattern generator.
2. Picture control is minimum and brightness control is still normal.
3. Position the neck assy as shown in Fig. 3-2.
4. Move the deflection yoke forward to touch the CRT.
5. Adjust the upper pin and the lower pin symmetrically by opening or closing the Y-splitting axis correction magnets on the neck assy.
6. Return the deflection yoke to its original position.



### (2) Landing

Note: Before carrying out the following adjustments adjust the magnets as indicated below (See Fig. 3-3).

1. Input an all-white signal from the pattern generator. Maximize the picture setting and adjust the brightness setting.
2. Rough-adjust the focus and horizontal convergence.
3. Loosen the deflection yoke screws, align the purity adjustment knob to the central position. (See Fig. 3-1)
4. Switch from the all-white pattern to an all-green pattern.
5. Move the deflection yoke backwards and adjust with the purity magnet so that the green is at the center and it aligns symmetrically. (See Fig. 3-4)
6. Move the deflection yoke forward and adjust so that entire screen becomes green.
7. Switch the raster signal to red, then to blue and verify the landing condition.
8. When the position of the deflection yoke has been determined, fasten the deflection yoke with the screw.
9. If the beam does not land correctly in all the corners, use magnets to correct it. (See Fig. 3-5)



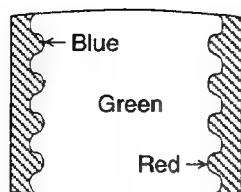


Fig.3-4

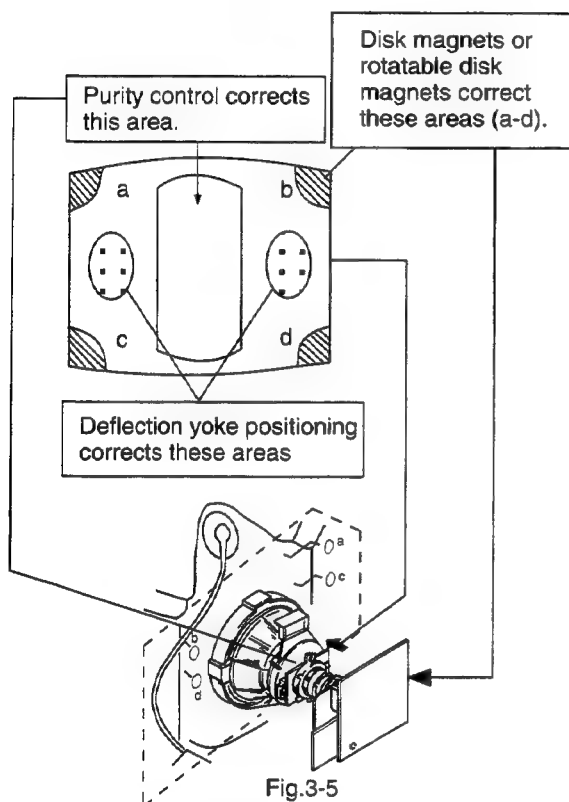
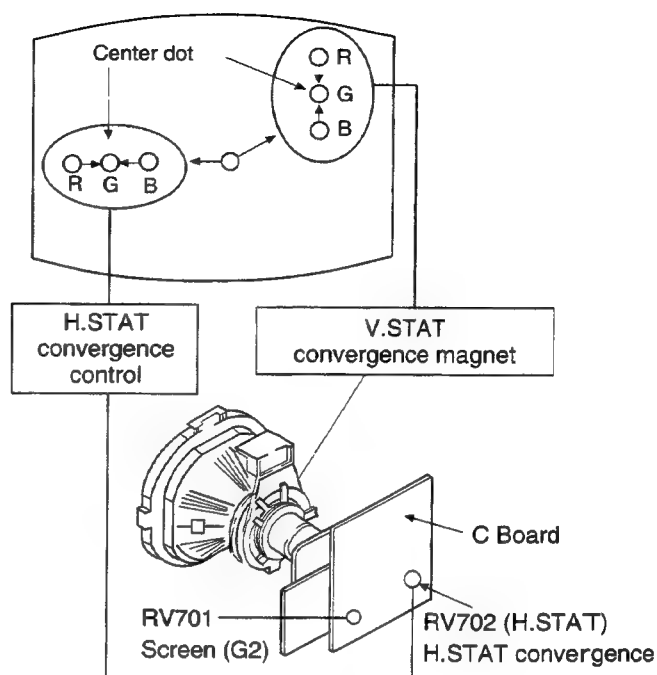
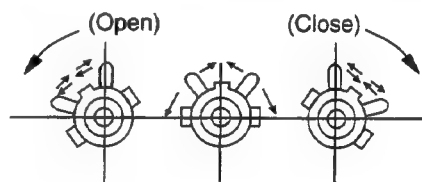


Fig.3-5



- If the horizontal dots are unable to coincide with the variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking. (Adjust the convergence by tilting the V.STAT convergence or by opening or closing the V.STAT convergence.)



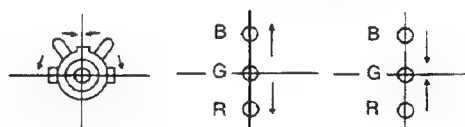
## 3-2. CONVERGENCE

### (1) Screen center convergence (Static convergence)

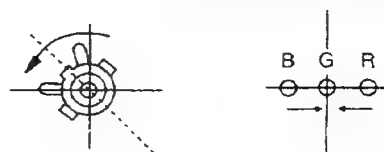
1. Input a dot signal from the pattern generator. Normalize the picture setting.
2. (Moving horizontally), adjust the H.STAT control so that the horizontal red, green and blue dots coincide at the center of screen.
3. (Moving vertically), adjust the V.STAT magnet so that the vertical red, green and blue points coincide at the center of screen.

4. Movement of the red, green and blue dots by tilting the V.STAT magnet and by opening or closing the V.STAT magnet.

- ① By opening or closing the V.STAT magnet, the red, green and blue points move as shown below



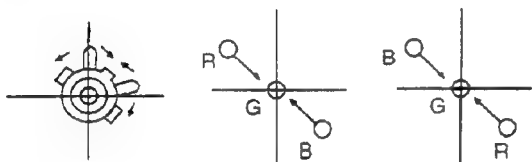
- ② By rotating the V. STAT magnet counterclockwise, the red, green and blue dots move as shown below.



- ③ By rotating the V.STAT magnet clockwise, the red, green and blue dots move as shown below.



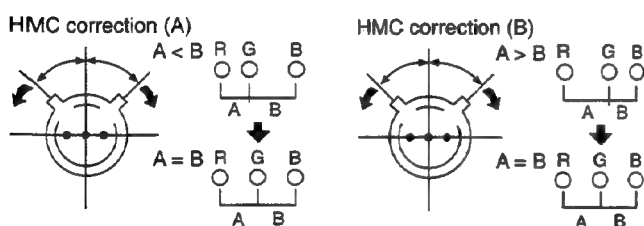
- ④ By opening or closing the V.STAT magnet, the red, green and blue dots move as shown below.



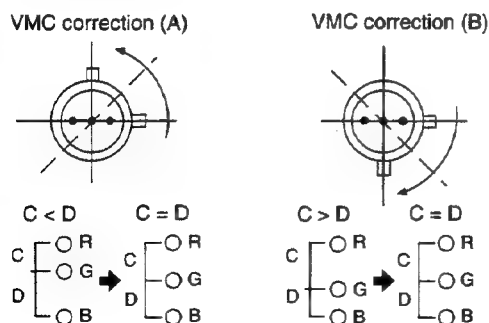
- If the blue dot does not coincide with the red and green points, correct the points by using the BMC (Hexapole) magnet.

- ⑤ Correction for HMC (horizontal mis-convergence) and VMC (vertical mis-convergence) by using the BMC (Hexapole) magnet.

- ① HMC correction by BMC (Hexapole) magnet and movement of the electronic beam.



- ② VMC correction by BMC (Hexapole) magnet and movement of the electronic beam.



#### Layout of each control

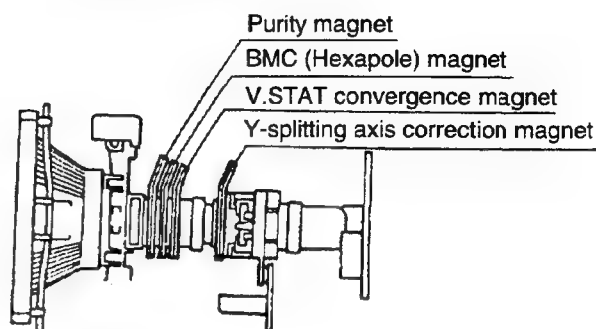
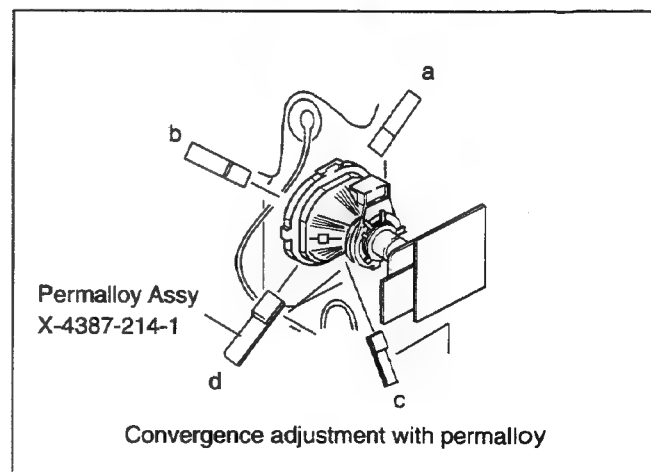
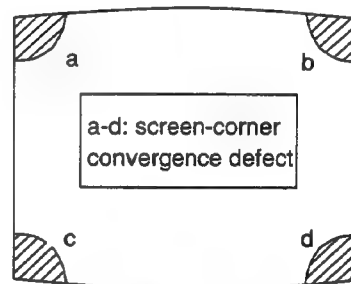


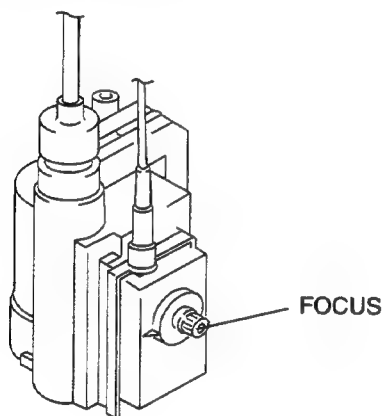
Fig.3-5

- If you are unable to adjust the corner convergence properly, correct them with the use of permalloys.



### 3-3. Focus

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control on the flyback transformer for the best focus at the center of the screen.  
Bring only the center area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



### 3-4. Screen (G2), White balance (Adjustment in the service mode with remote commander)

#### G2 adjustment (RV702)

1. Input a dot signal from the pattern generator.
2. Set the Picture, Brightness and Colour to minimum.
3. Apply 170V DC from an external power supply to the R, G and B cathodes of the CRT.
4. Whilst watching the picture, adjust the G2 control RV701 [ SCREEN ] on the C board to the point just before the return lines disappear.

#### White balance adjustment

1. Receive an all-white signal.
2. Enter into the Service Mode by pressing 'TEST', 'TEST' and '01' on the Service Commander.
3. Select 'CRT Driver' from the on screen menu display and press **OK**.
4. The 'CRT Driver CXA1840' menu will appear on screen.

### CRT Driver CXA 1840

Crt Driver		CXA1840
21	R DRIVE	41
22	G DRIVE	adj
23	B DRIVE	adj
24	R CUT-OFF	8
25	R C	0
26	G CUT-OFF	adj
27	G C	0
28	B CUT-OFF	adj
29	B C	0
30	AFC MASK	0
31	DRIVE LVL	52
32	SUB BRT	32
33	H SWEEP SW	on
34	SKEW D	off
35	OUT DC	0

5. Set picture to MAX.
6. Set the 'R DRIVE' to 41.
7. Adjust the 'G DRIVE' and 'B DRIVE' with the ▲ ▼ buttons so that the white balance becomes optimum.
8. Press the **OK** button to write the data for each item.
9. Set picture to MIN.
10. Adjust 'R CUT-OFF', 'G CUT-OFF' and 'B CUT-OFF' with the ▲ ▼ buttons so that the white balance becomes optimum.
11. Press the **OK** button to write the data for each item.

## SECTION 4

### CIRCUIT ADJUSTMENTS

#### 4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander, RM-838.

##### HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set while pressing the + (plus) and - (minus) buttons on the customer front panel.

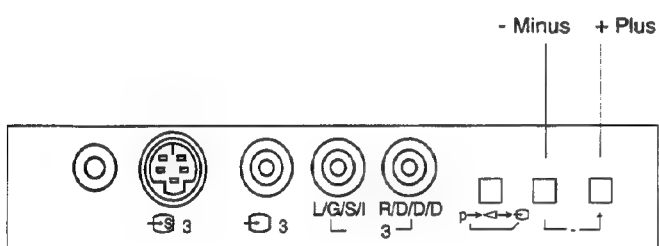


Fig. 4-1

2. "TT" will appear on the upper right corner of the screen.

Command operation in service mode

Item selection, data up/down

Menu indication

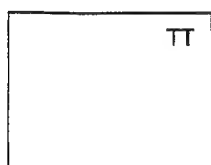


Fig. 4-2

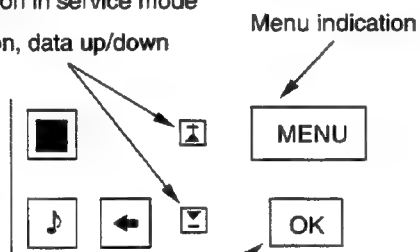


Fig. 4-3 Selection completion, data written-in

3. Press "Test" "Test" and 01 on the commander to get the menu on screen.

AE - V7-62	AE-3	08/06/95
Init TV		
PIP Adjust		
Adjustments		
Video Contr		
CRT Driver		
Dynamic Conv		
Video Proc		
PIP		
PIP Dynamic		
Aspect / Field		
PAP		
SRC		
TDA6812		
PALPLUS		
TDA9160		
TDA9145		

4. Press the and buttons on the remote commander to select the adjustment item.
5. Press the button to proceed to the next menu.
6. If the adjustment item is 'CRT Driver', press the button to move to 'CRT Driver'.
7. The Menu as indicated in Fig 4-5 will appear on the screen.

	CRT Driver	CXA1840
1	V POS	adj
2	V SIZE	adj
3	V LIN BAL	adj
4	V LIN	adj
5	V SCROLL	127
6	V ASP PAP	2
7	H POS	adj
8	H SIZE	adj
9	H PIN CUSH	adj
10	H TILT	adj
11	H UP COR	adj
12	H LOW COR	adj
13	AFC V BOW	adj
14	AFC V ANGLE	adj
15	V COMP	5



Fig. 4-4

8. Press the button to move > to the adjustment item and press the button.
9. Press the and buttons to change the data in order to comply with each standard.
10. Press the button to write data into memory.
11. Turn off the power to quit the service mode when adjustments have been completed.

CXA1839 (VIDEO CONT)

Item No	Adjustment item	Data Amount
1	SUB BRT	8
2	SUB COL1	8
3	SUB CONT1	8
4	PIC	53
5	HUE	31
6	COL	31
7	BRT	31
8	SHP	31
9	SUB HUE	7
10	D.COIL	off
11	SHP LIM	off
12	AGE WHT	off
13	R-Y/R	13
14	R-Y/B	15
15	G-Y/R	7
16	G-Y/B	5
17	RGB LEV2	8
18	SUB SHP	3
19	SUB FO	1
20	PRE/OVER	0
21	NR LEVEL	1
22	DC TRAN	0
23	DYN PIC	1
24	CEC LEVEL	2
25	VM LEVEL	2
26	ABL MODE	1
27	DYN ABL	off
28	Y SYM SW	off
29	AGE BLK	off

CXD2035 (ASPECT)

Item No	Adjustment item	Data Amount
1	COMPRESS	7
2	FRAME WID	5

CXD2030 (VIDEO PROCESSOR)

Item No	Adjustment item	Data Amount
1	DNR	on
2	DNR VALUE	5
3	TA SYN CLP	16
4	TB BGP	50
5	TD CLP	25
6	FOTO CD SW	off
7	BLK PORCH	16
8	NT TD BGP	25
9	PAL TD BGP	25
10	N.SECAM TB	50
11	SECAM TB	50
12	358 NR LVL	3
13	443 NR LVL	5

CXD2031 (PAP)

Item No	Adjustment item	Data Amount
1	M.PH.WR.ST	45
2	S.PH.WR.ST	34
3	M.RD. START	40
4	BRT SUB	8

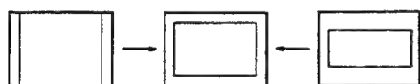
Typical Value (OSD based) when receiving PAL Philips pattern.

# DEFLECTION SYSTEM ADJUSTMENT

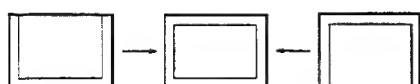
1. Enter into the service mode and select 'CRT Driver'. The 'CRT Driver CXA1840' adjustment menu will be displayed.
2. Select and adjust each item in order to get an optimum image.

Item No	Adjustment item	Data Amount
1	V POS	adj
2	V SIZE	adj
3	V LIN BAL	adj
4	V LIN	adj
5	V SCROLL	127
6	V ASP PAP	2
7	H POS	adj
8	H SIZE	adj
9	H PIN CUSH	adj
10	H TILT	adj
11	H UP COR	adj
12	H LOW COR	adj
13	AFC V BOW	adj
14	AFC V ANGLE	adj
15	V COMP	5
16	H COMP	0
17	WV CENT RF	144
18	WV AREA RF	36
19	W CENT VCR	160
20	W AREA VCR	20

## V SIZE



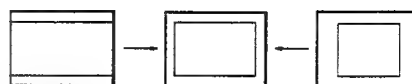
## V POS



## V LIN



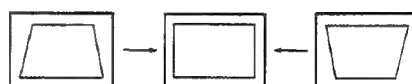
## H SIZE



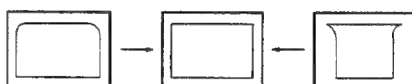
## H PIN CUSH



## H TILT



## H UP COR



## H LOWER COR



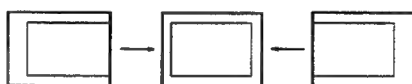
## AFC V BOW



## AFC V ANGLE



## H POS



3. Press **OK** button to write the data.

If the menu display prevents viewing the screen while carrying out the adjustments, it can be removed by pressing **OK** on the remote commander. Pressing **OK** once again will restore the menu on screen.

## 4-2. VOLUME ELECTRICAL ADJUSTMENTS

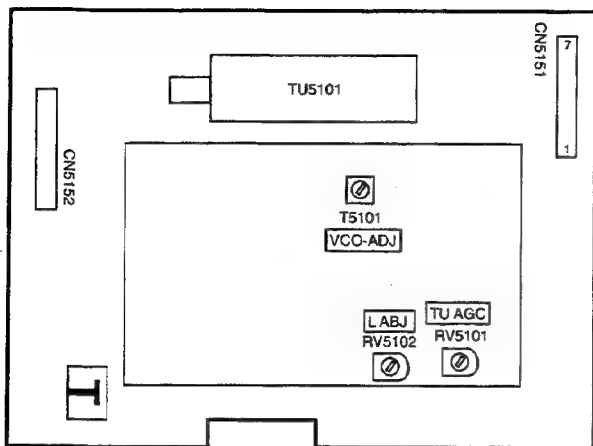


Fig. 4-5 - T Board Component Side -

### IF Coil Adjustments (T5101) A, B, D, E, K and L models

1. Input a 38.9Mhz signal to the IF testpoint on the T-Board.
2. Receive a channel so that the IC5103 is selected for system B/G.
3. Measure the voltage at the AFT testpoint (Pin 7 of CN5151) and adjust T5101 to obtain  $2.5V \pm 0.2V$ .

### IF Coil Adjustment (T5101) UK models only.

1. Input a 39.5Mhz signal to the IF testpoint on the T-Board.
2. Receive a channel so that the IC5103 is selected for system I.
3. Measure the voltage at the AFT testpoint (Pin 7 of CN5151) and adjust T5101 to obtain  $2.5V \pm 0.2V$ .

### L Band 1 Adjustment (RV5102) for B models only

1. Input a 34.1Mhz signal to the IF testpoint on the T-Board.
2. Receive a channel so that the IC5103 is selected for (System L Band 1).
3. Measure the voltage at the AFT testpoint (Pin 7 of CN5151) and adjust T5102 to obtain  $2.5V \pm 0.2V$ .

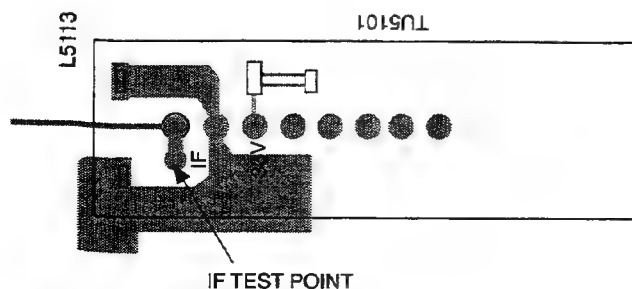


Fig. 4-6

### AGC Adjustment (IF Block)



- IF Block top side -

Fig. 4-7

1. Receive an off-air signal.
2. Adjust the AGC VR so that there is no snow noise and cross-modulation visible on the screen.
3. Change the receiving channel and confirm status.

### Sub Brightness Adjustment

1. Input a Phillips pattern.
2. Select 'RESET' from the menu to normalize the set.
3. Set the CONTRAST to minimum.
4. Press "Test" "Test" and 01 on the remote commander.
5. Adjust the BRIGHTNESS with the +/- buttons on the remote commander after selection of 'Sub Bright' so that the 0 IRE section of the gray scale is completely cut off and the 20 IRE section is only just visible on the screen.
6. Press 'MENU' and '0' twice to release Test mode 2.
7. Select 'RESET' from the menu to normalize the set.

### Picture Rotation Adjustment

1. Input a PAL color bar signal.
2. Press the **MENU** button on the commander to get the menu on screen.
3. Press the **⏏** and **⏏** buttons of the commander and move **>** to PRESET/TIMER followed by INSTALLATION and PICTURE ROTATION.

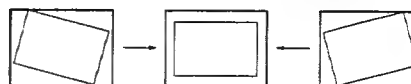
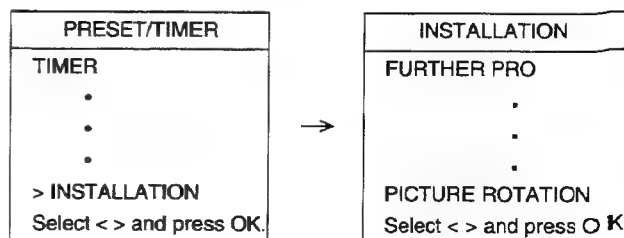


Fig. 4-8

### 4-3. TEST MODE 2:

Is available by pressing the Test button twice, OSD "TT" appears. The functions described below are available by pressing the two numbers. To release Test Mode 2, press 0, 10, 20 ... twice or switch the TV into Standby Mode. Pressing the two Local Control buttons (+ and -) during Power ON will also switch into "TT" mode.

In TT mode, it is possible to remove the Menu from the screen by pressing the Speaker Off button once. Pressing the Speaker OFF button a second time will cause the menu to reappear. The Function is kept even when the menu is not displayed!!

00	Switch back to normal mode - TT mode off	16	Save actual Last Power Memory data at Reset Data location )The previous Reset data is overwritten)
01	Switch service menu on	15/16	With these two functions, it is possible to preset user defined Reset values (just TT16) or to preset factory defined Reset values (first TT15 then TT16)
02	Direct access to Noise reduction	17	This function presets the Labels for the AV sources: AV1, RGB, AV2, YC2, AV3, YC3, AV4, YC4.
03	Set Volume to 30%	18	Text possible On/Off selection of Text (toggle function)
04	Service Menu in "Service Mode"	19	Direct access to Stereo Separation With cursor Up/Down the Stereo separation can be adjusted (w/o OSD, Menu display)
05	Service Menu in "Production Mode"	20	see TT10
06	Set Volume to 80%	21	Picture Rotation automatic function : (-4) -> (+4) -> 0
07	Aging mode	22	Operating Timer and Error Monitor display
08	Shipping condition (Production request) To ensure that all TV sets leave the Production with the same presettings. Programme 1 is selected, AV IN is set to AV1, AV Out is set to TV Out, Volume and HP Volume is set to 35%, Resolution is set to high, Format is set to 4:3, Pip is set to Top Left position, Pip is switched off, TT mode is switched off, all analogue values are set to the reset setting, space Sound - Equalizer - Loudness = off, DNR off, Dig. Mode = 1, Wide Zoom Mode for 28W models, Menu Language Reset, Prog. Pointer table reset Non Interlace is allowed in Text mode.	23	Direct access to Sub Brightness Adjustment With cursor Up/Down the Sub BRT can be adjusted (w/o OSD, Menu display)
09	Language reset. With this function the "Language Byte" in the NVM (Bank 0AAH Address 0DCH) is erased (set to 0FFH). The Language Menu appears now automatically when the TV set is switched ON as long as no new language is selected.	24	Direct access to Sub Color. With Cursor Up/Down the Sub Color can be adjusted.
10	The TT number will be deleted. All numbers with 0 (10, 20, 30, 40, 50, 60, 70, 80, 90) will reset the TT number. A new number can be selected. TT display is kept	25	Status menu display (SubController, CXA1840 Status, Main Controller.
11	Direct access to Balance. With Cursor Up/Down the Balance can be controlled (w/o OSD, Menu display)	26	Text Character selection (Char set 06 -> West Europe)
12	Direct access to Hue. With Cursor Up/Down the Hue can be controlled (w/o OSD, Menu display)	27	Text Character selection (Char set 38 -> East Europe)
13	Display of Software Version and TV set configuration	28	Text Character selection (Char set 40 -> West Europe) US English
14	Production Info Display	29	Text Character selection (Char set 55 -> West Europe) Turkish
15	Read factory setting from ROM (Program code) and store this data at Last Power Memory data location (The previous last power memory data is overwritten) AE3 has 3 packages of Analogue data: 1. Last Power memory data. This data is sent continuously to the corresponding IC's (TDA1839, SC, TDA6812) with this data the TV picture/sound appears. 2. Reset data. By pressing "Reset" in the menu this data is transferred from Reset Data location to the Last Power data location in the NVM. That means the Last Power Memory Data is overwritten by the Reset data last Power memory and Reset data is now the same. 3. Factory fixed data. Fixed data is held in the ROM code of the micro processor (ROM can't be changed)	30	see TT10
		31	Text Character selection Char set Russian
		32	Text Character selection Char set Greek
		33	Programme catching test (Programme catching can be released by "Menu command")
		34	Multi PIP adjustment. Direct access to 3.58 horizontal write position. With Cursor Up/Down the 3.58 H write Pos can be adjusted (w/o OSD, Menu display).
		35	Multi PIP adjustment. Direct access to 4.43 horizontal write position. With Cursor Up/Down the 4.43 H write Pos can be adjusted (w/o OSD, Menu display).
		36	Mtx Register 112 = intern display clock
		37	Mtx Register 112 = extern display clock

38	Automatic selection of Screen Modes: (not for S (4:3) Models. 4:3 -> Zoom -> Zoom up -> Zoom Center -> Zoom down -> Zoom Center -> smart -> (if Pal+ signal) PALPLUS -> wide.
39	Reset Programme Table (NVM Bank 0ACH) The sorting of programmes in "Programme Sorting Menu" is reset.
40	see TT10
41	no function
42	no function
43	no function
44	no function
45	Set NVM to Protect mode (Bank 0AEH Adr. 0FFH write with 0)
46	IR Channel Presetting Mode. The channel presetting can be done by a Special IR transmitter Sequence: TT46 -> -- PR Number select display appears Select Prog. No from where the channel shall be stored. --> Now TV is waiting for IR sequence <-- --> If no IR transmission starts TT46 is released after 20 secs <-- !Note: When TT46 is active, any transmission will be interpreted as PROG data !
47	Direct access to Headphone Source Selection (Production use)
48	Direct access to AGC Adjustment (PWM) output.
49	The EEPROM Testbyte is erased. After Power OFF -> ON the complete EEPROM data (except channel tables) is overwritten. EEPROM Protection byte is set to 0 protection mode
50	see TT10
51	Strobo mode is activated.
52	no function.
53	Photo mode test (Photo mode can be released by "Menu command").
54	Direct access to Velocity Modulation VM (Production use)
55	MTX Slicer Control "Low Pass" (only Sys L)
56	MTX Slicer Control "No Compensation"
57	Megatext Service Menu ON
58	MTX Small Framing Code Window
59	MTX Wide Framing Code Window
60	see TT10

61	Set Dolby default values.
62	ACI disable.
63	ACI enable.
64	Reset all IIC Slave commands (Production use)
65	Reset stored error codes in NVM.
66	Reset for PALplus local controller and Sub Controller.
67	Direct access to Headphone Volume. With cursor Up/Down the Headphone Volume can be controlled (w/o OSD, menu display) (Production use)
68	ignore errors.
69	reset ignore errors (show errors)
70	see TT10
71	Picture Rotation Function On/Off toggle.
72	Dolby register setting menu.
73	Megatext RGB textlevel one step decreased (max 3 steps down starting from E0h) (Production use)
74	Megatext RGB textlevel one step decreased (max 1 steps down starting from E0h) (Production use)
75	reserved
76	CXD 2030 Default data setting.
77	CXD 2031 Default data setting
78	CXD 2032 Default data setting
79	CXD 2033 Default data setting
80	see TT10
81	CXD 2033D Default data setting
82	CXD 2035 Default data setting
83	CXA 1526 Default data setting
84	CXA 1839 Default data setting
85	CXA 1840 Default data setting
86	TDA 9145 Default data setting
87	TDA 9160 Default data setting
88	no function
89	no function
90	see TT10

#### 4-4. ERROR MONITOR AND DETECTION

In the menu 'Error Monitor', information about the error status of the set is displayed.

- Actual operating time
- Last five errors which are stored in the NVM.
- Actual error.

Error Monitor	
<b>Operating Time</b>	000355 h 35min
<b>Saved Errors</b>	
1. 40h=D1 Board	
2.. 60h=Q Board	
3. 70h=T Board	
4. 00h=no error occurred	
5. 00h=no error occurred	
<b>Actual Error</b>	
-> 00h=no error occurred	
to reset the NVM press 'TT' 65	

Additionally the Error Reader can be connected to the service connector to read out the actual errors.

The device check itself is active while the TV set is running out of stand-by mode. The devices are checked by sending an I<sup>2</sup>C start sequence and if there is no acknowledgement back from the devices it is regarded as an error. Each device is checked three times and if at every attempt there is no reply from the relevant device an error is given. To read the error codes press 'TT' followed by 22 on the commander to view the Error Monitor menu.

To reset the error codes in the NVM press 'TT' followed by 65 on the remote commander.

**TABLE OF ERROR CODES**

Error Code	Device	Description	Board
000h	no device	no error has occurred	-
001h	IIC 1 and IIC 2	IIC 1 and IIC 2 blockaded	-
002h	IIC 1	IIC1 is blockaded	-
003h	IIC 2	IIC 2 is blockaded	-
010h	A Board	A Board is defective	-
020h	A1 Board	A1 Board is defective	-
030h	BX-Board (B,B1,B2)	B, B1, or B2 Board is defective	-
040h	D1 Board	D1 Board defect	-
050h	J Board	J Board defect	-

Error Code	Device	Description	Board
060h	Q Board	Q Board defect	-
070h	T Board	T Board defect	-
011h	CXP85332	No response from the Subcontroller	A
012h	ST24C16	No response from the NVM	A
013h	SDA5273	No response from the Megatext IC	A
014h	TDA6812	No response from the Sound Processor	A
015h	SAA7283	No response from the Nicam Decoder	A
016h	UV916H	No response from the Main Tuner	A
017h	CXA1839Q	No response from the Video Controller	A
018h	CXA1840	No response from the CRT Driver	A
019h	RGB8443	No response from RGB/YUV	A
021h	TDA6622	Audio processor of the Center and Surround channel in the case of Dolby Prologic does not respond.	A1
022h	TDA7317	No response from the Equalizer.	A1
031h	CXD2030R	No response from the Digital Video Processor.	B/B1
032h	CXD2031R	No response from the Twin Picture IC.	B1
033h	CXD2032R	No response from the Digital Sampling Rate Converter.	B/B1
034h	CXD2033R	No response from the Picture in Picture IC.	B
035h	CXD2035R	No response from the Aspect Converter.	B/B1
036h	TDA9160	No response from the Chroma Decoder.	B/B1
037h	TDA9145	No response from the Chroma Decoder (on French models only.)	B2
041h	CXA1526	No response from the Convergence IC.	D1
051h	CXA1855	No response from the AV-Switch	J
061h	83C65202	No response from the Local Controller.	Q
071h	UV1316/TSA5526	No response from the Subtuner.	T
072h	CXA1875	No response from the Port Expander.	T

#### 4-5. LED Error Blinking

In addition to the Error Monitor facility there is an additional error indicator which indicates the most important errors also in the case of IIC error and Megatext error in opposition to the error monitor.

The error is recorded by counting the number of times that LED B blinks. This facility also works while in stand-by mode.

##### LED Error Code.

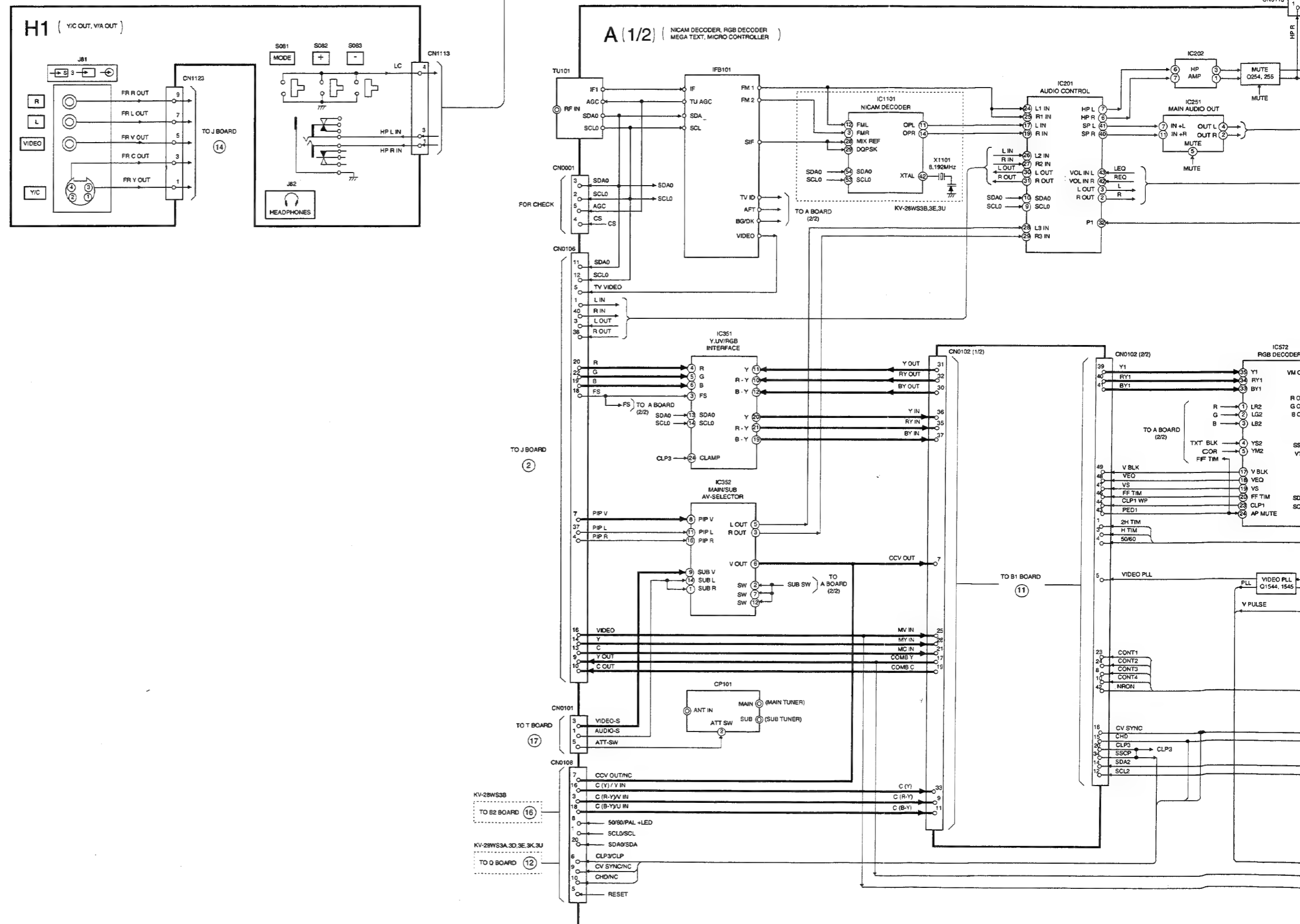
Error	number of LED B blinking	Description	Board
0	1	general IIC error	-
1	2	ST24C16 NVM error	A
2	3	CXP85332 subcontroller error	A
3	4	CXD2030R error of Digital Video Processor	B/B1
4	5	CXD2032R error of Digital Sampling Rate Converter	B/B1
5	6	CXD2035R error of Aspect Converter	B/B1
6	7	TDA1839 error of Video Controller	A
7	8	TDA1840 error of CRT Driver	A
8	9	CXA1855 error of AV switch	J
9	11	SDA5273 error of Megatext	A
10	12	TDA6812 error of Sound Processor	A
11	16	V-Protection (In this case the TV set is switched off immediately)	-

# SECTION 5 DIAGRAMS

KV-28WS3

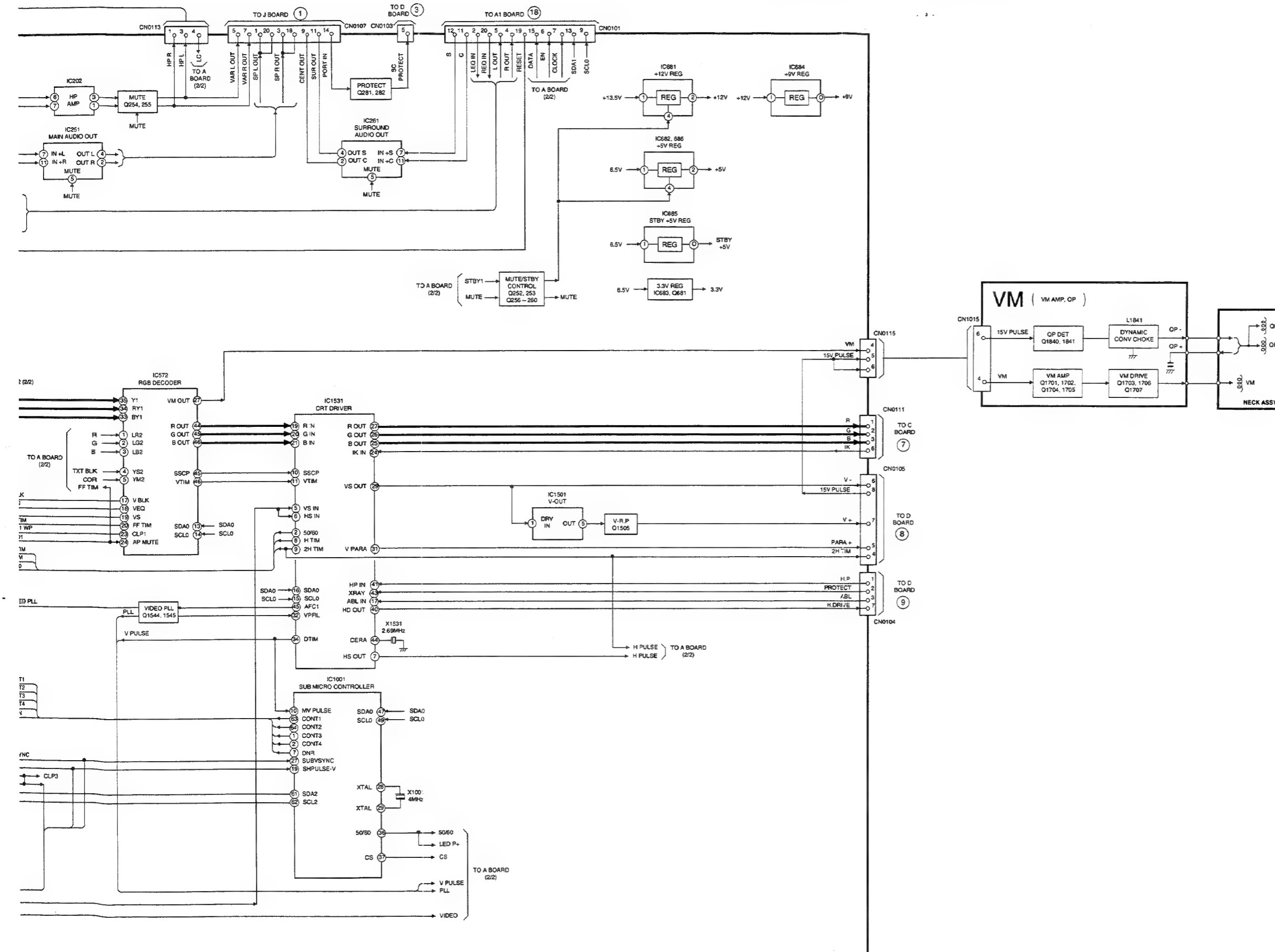
KV-28WS3

5-1. BLOCK DIAGRAM (1)

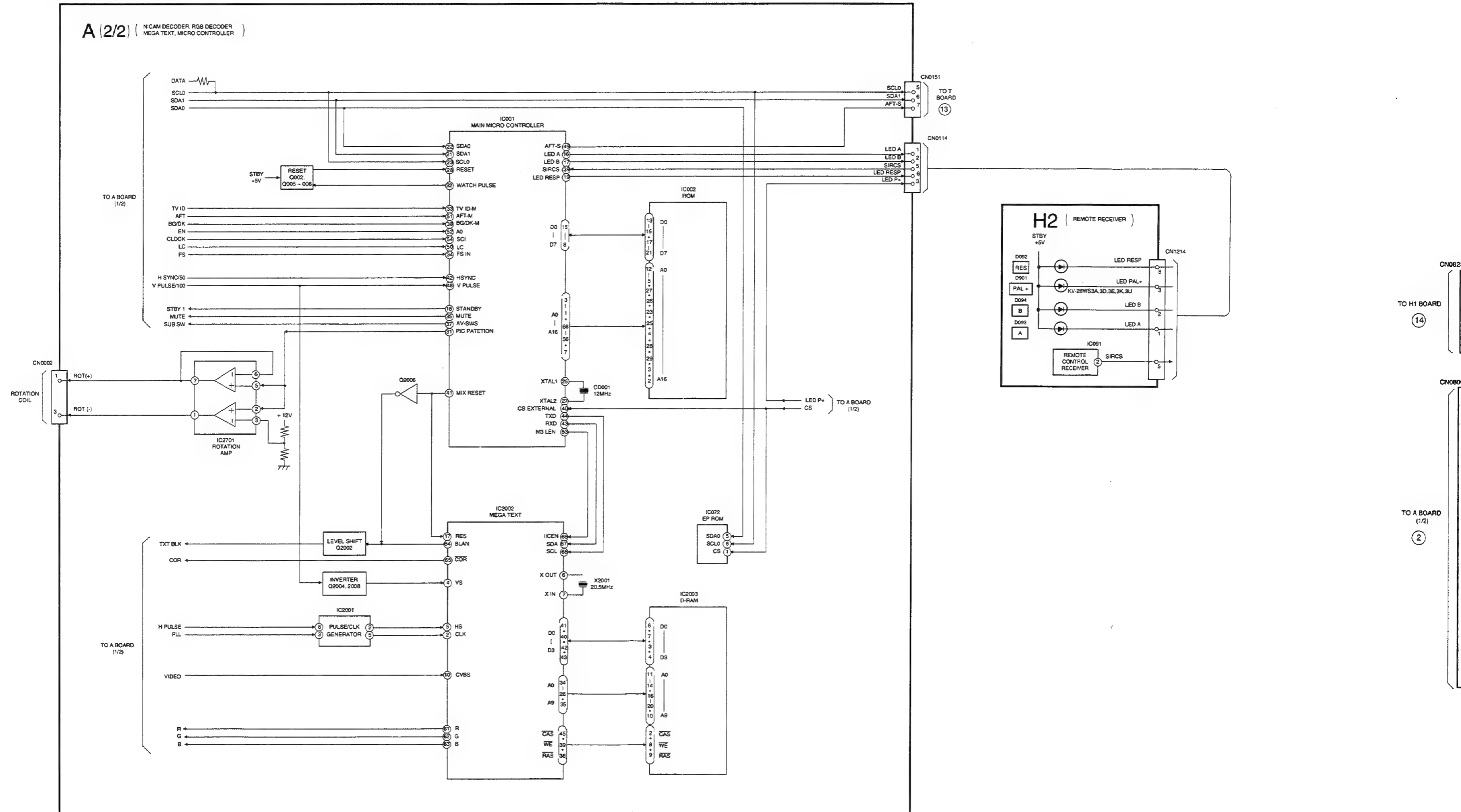


KV-28WS3

KV-28WS3



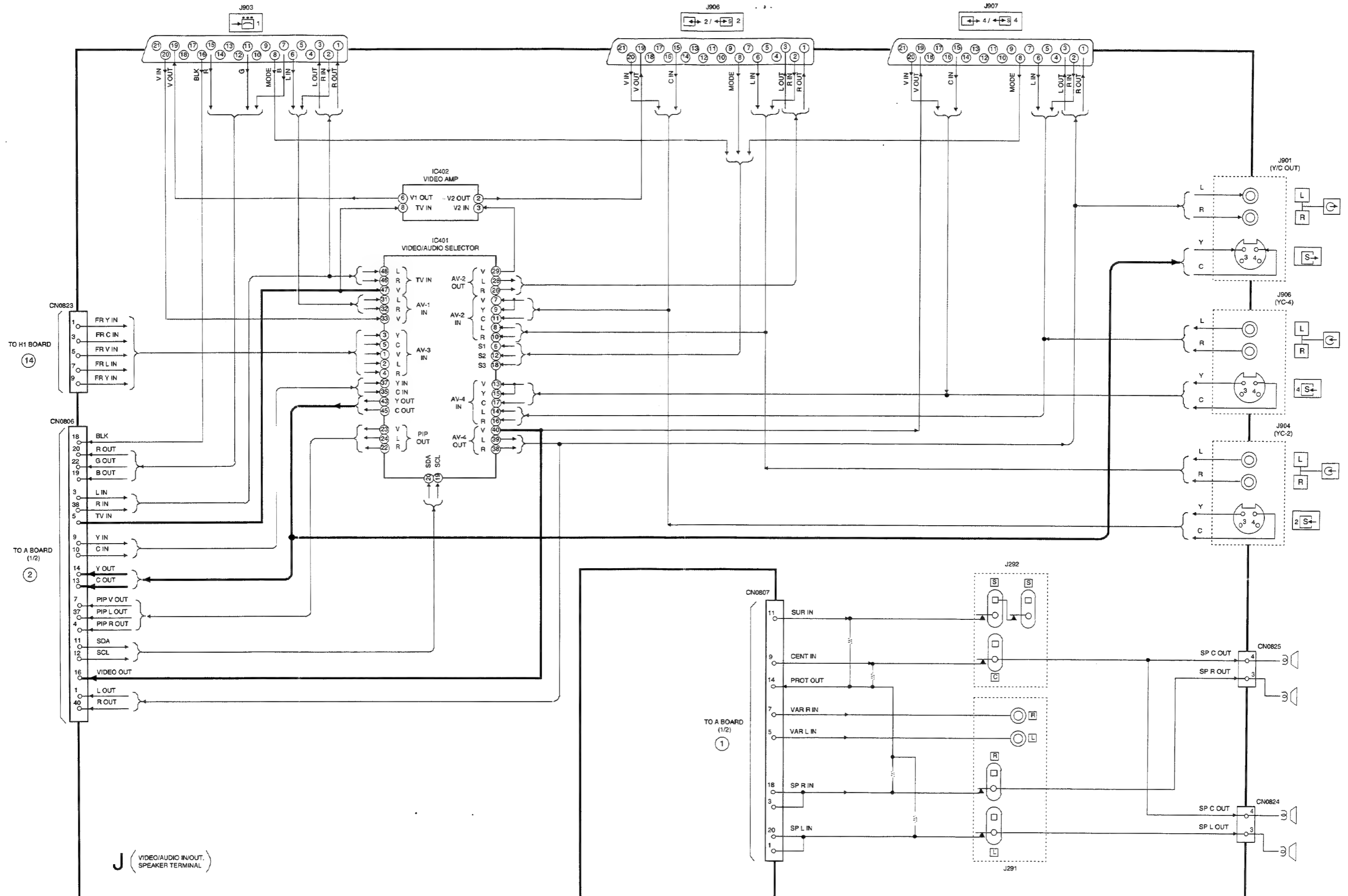
## BLOCK DIAGRAM (2)



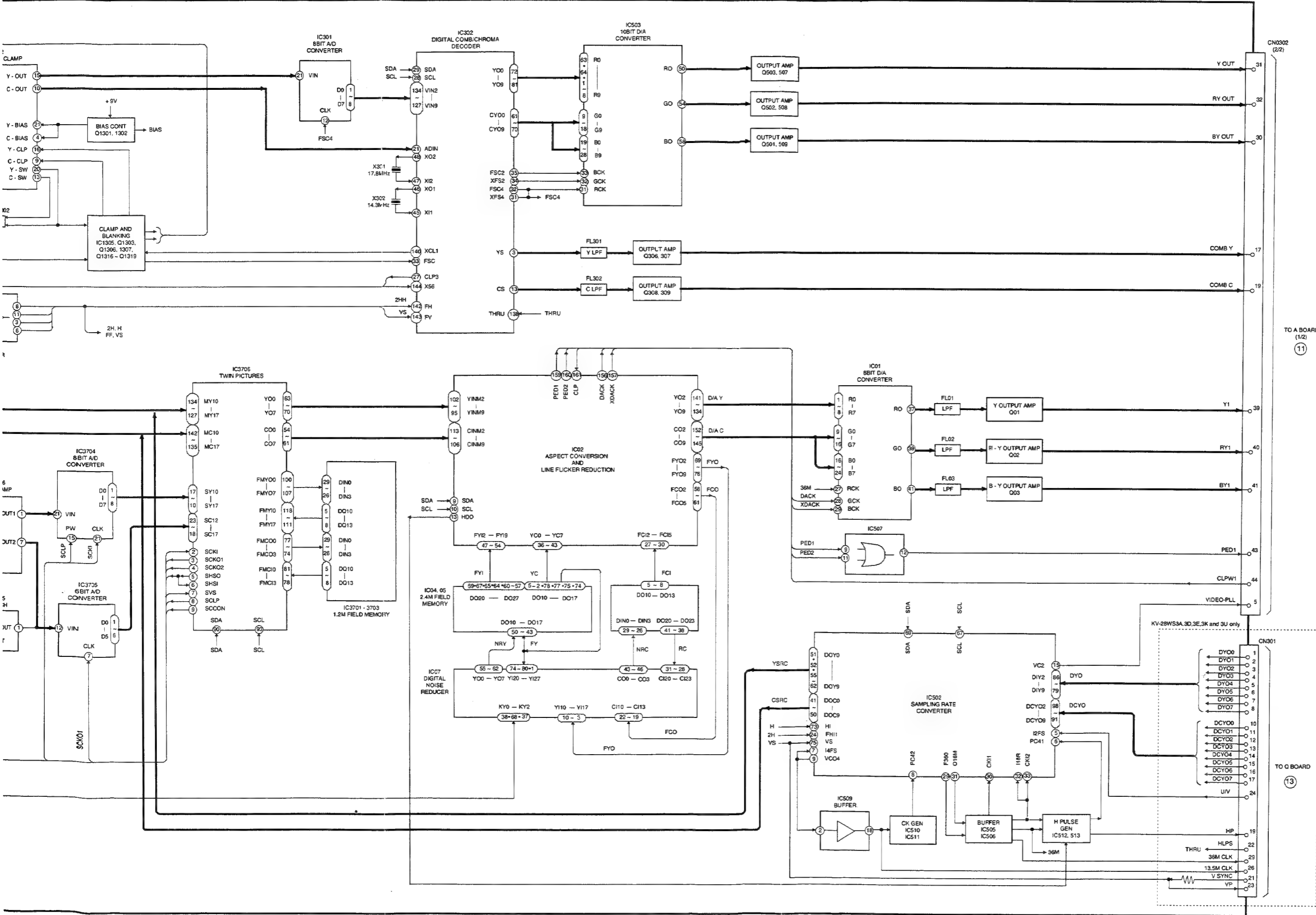
# BLOCK DIAGRAM (3)

KV-28WS3

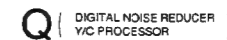
KV-28WS3



**KV-28WS3**



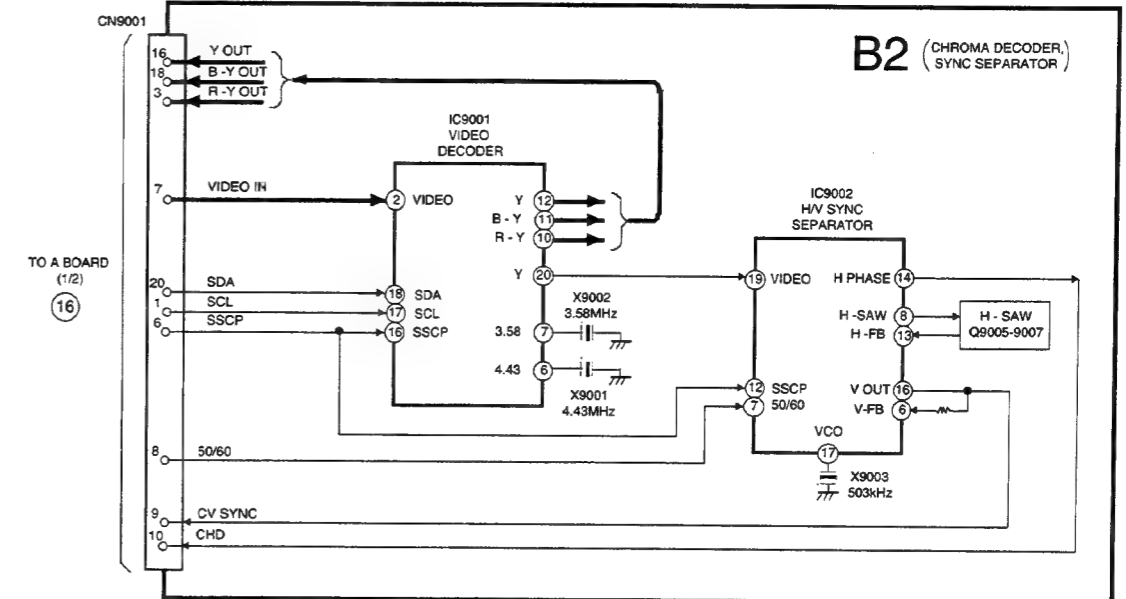
K

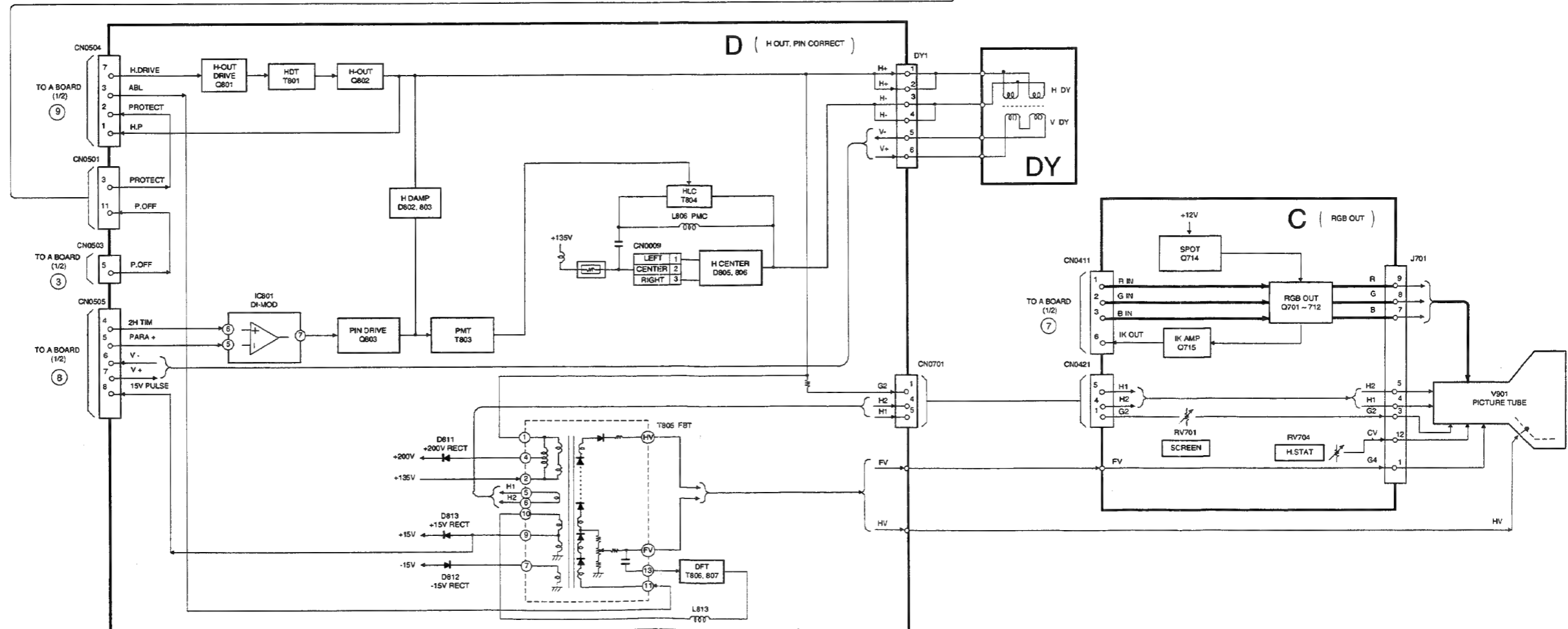


KV-28WS3

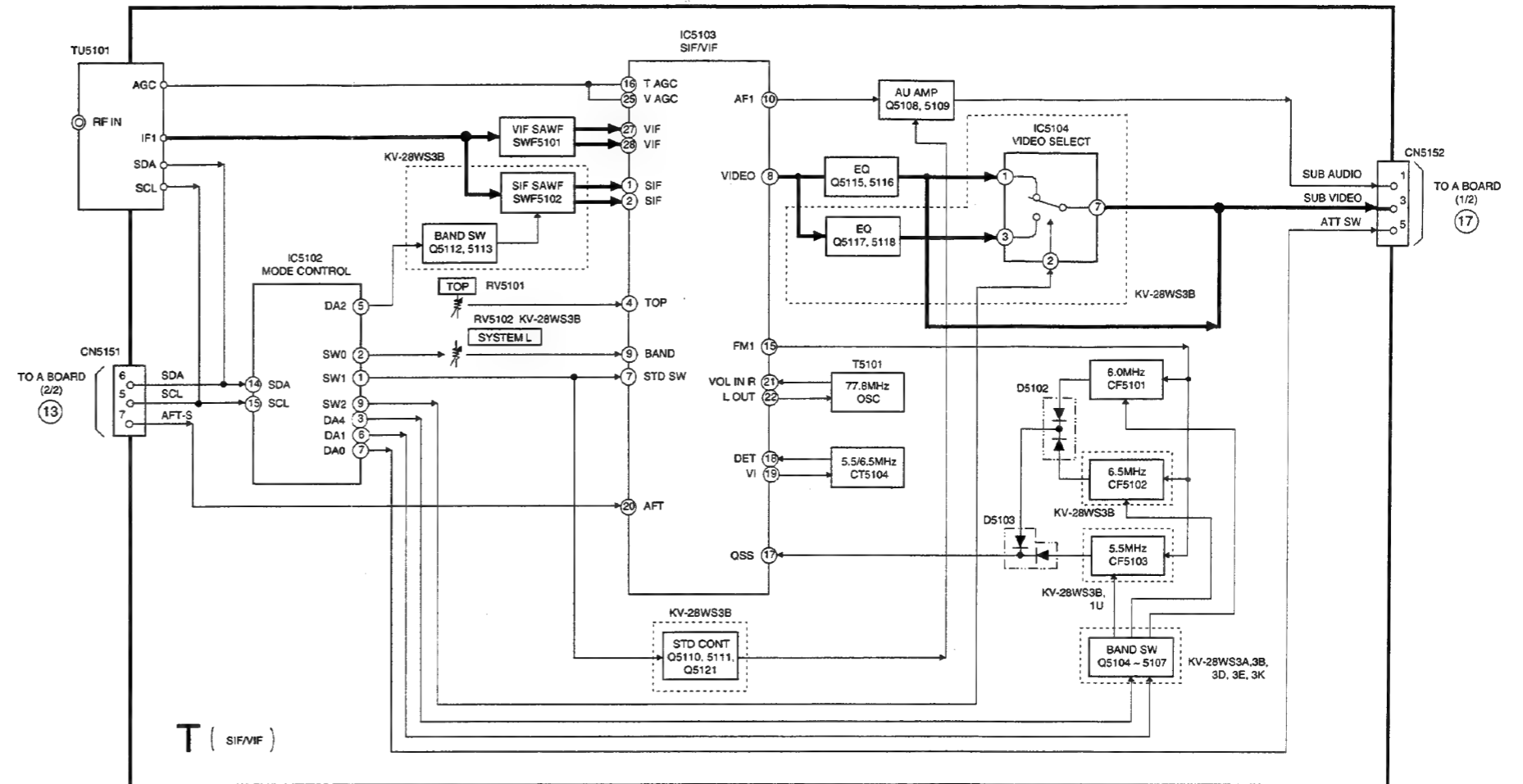
KV-28WS3

BLOCK DIAGRAM (6) KV-28WS3B

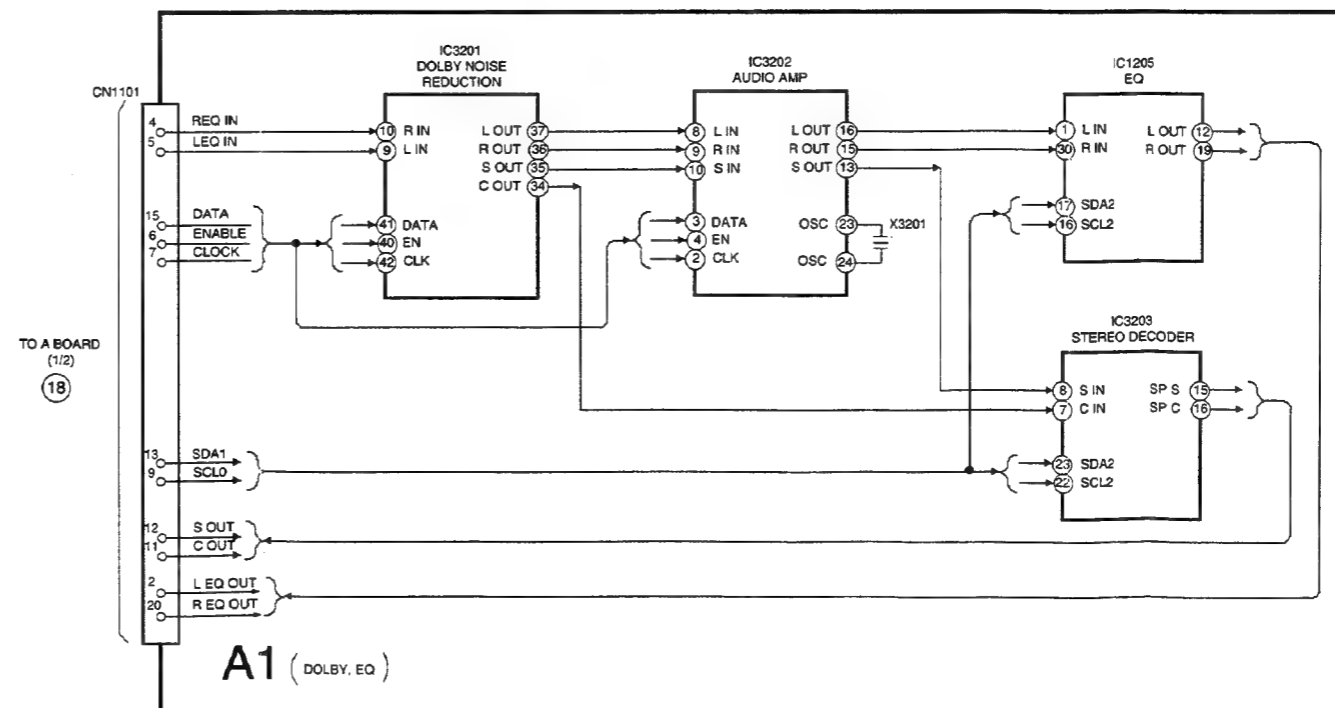


[illegible]

## BLOCK DIAGRAM (8)

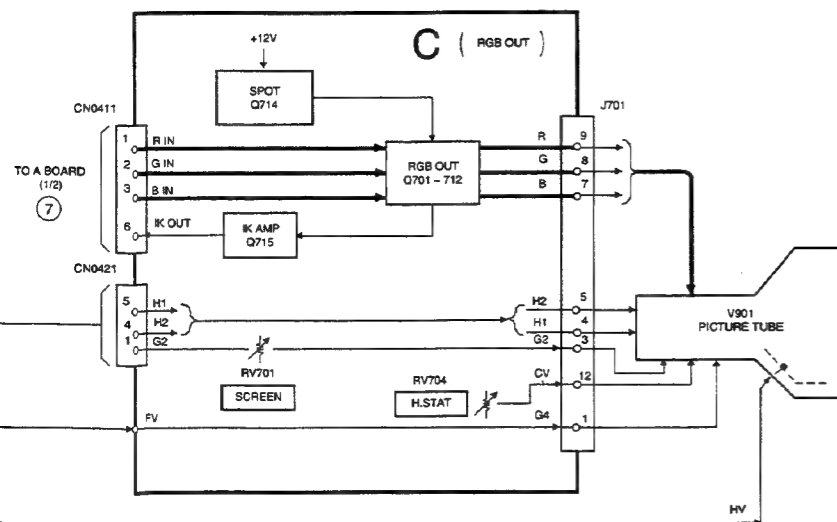


T (SIF/VIF)

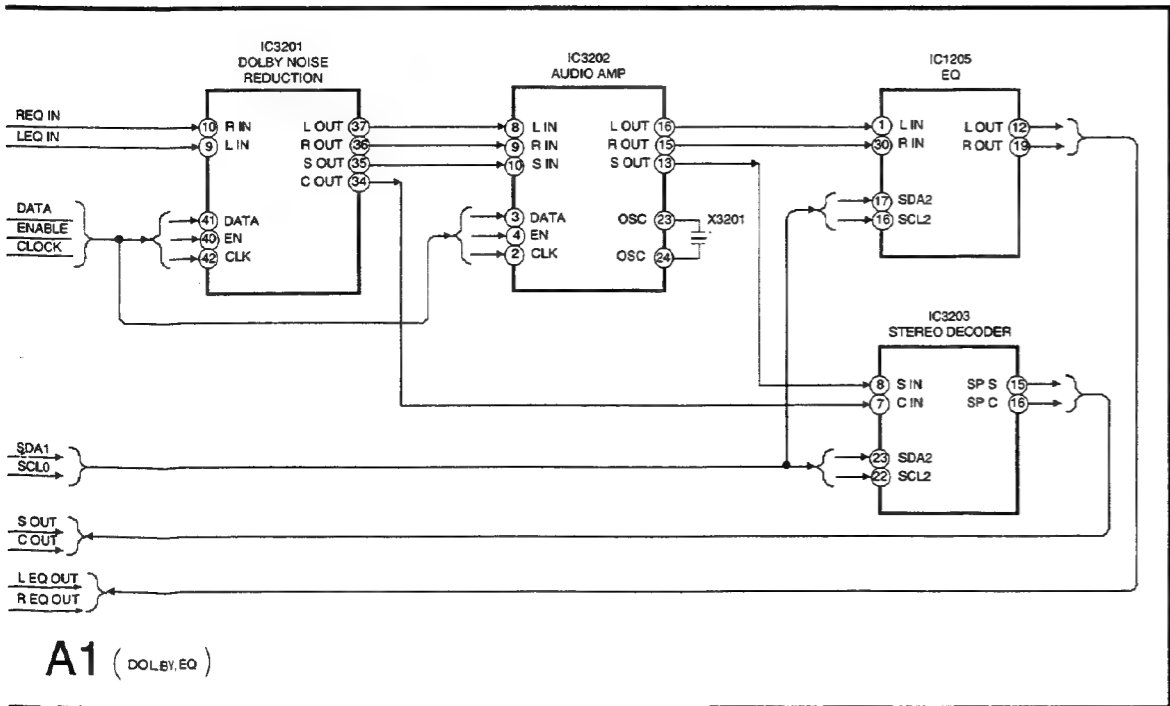
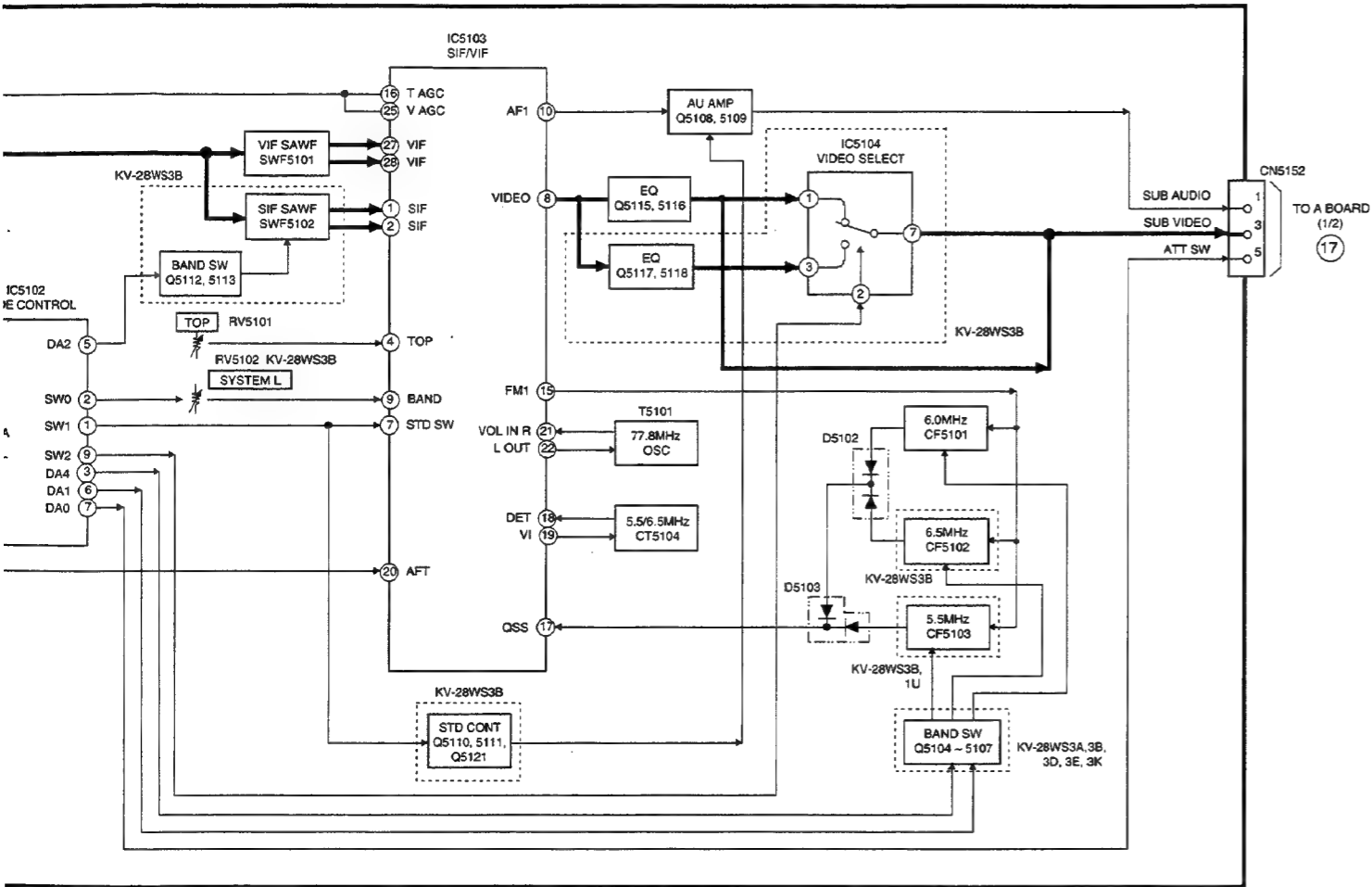


A1 (DOLBY, EQ)

DY

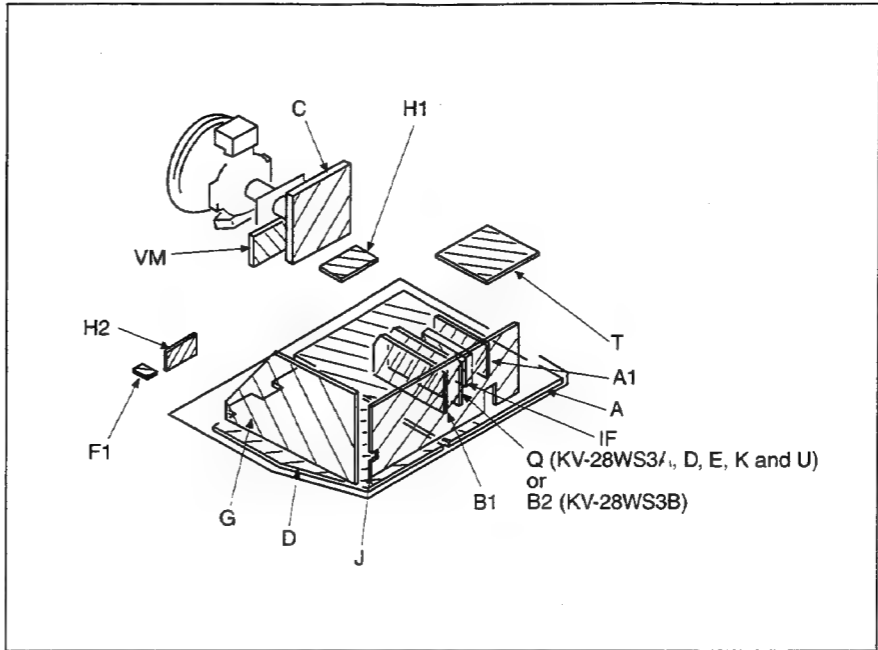


RAM (8)



A1 (DOLBY EQ)

5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{pF}$
- 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
- $\text{k}\Omega = 1000\Omega$ ,  $\text{M}\Omega = 1000\text{K}\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm  
Rating electrical power  $\frac{1}{4}$  W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- $\perp$  : earth - ground.
- $\text{---}$  : earth - chassis.
- $\text{---}$  : no mounted.

Note : The components identified by shading and marked are critical for safety. Replace only with the part number specified.

Note : Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: $\times$	ADJUSTABLE RESISTOR
	: LF-8L	MICRO INDUCTOR
	: TA	TANTALUM
COIL	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
CAPACITOR	: ALR	HIGH RIPPLE

- Readings are taken with a colour-bar signal in put.
- Readings are taken with 10M $\Omega$  digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- $\text{---}$  : B+ bus.
- $\text{---}$  : signal path. (RF)

**A** [ RGB DECODER, CRT DRIVER, NICAM DECODER, ]  
[ MEGA TEXT, MICRO CONTROLLER ]

— A Board — <Conductor Side>

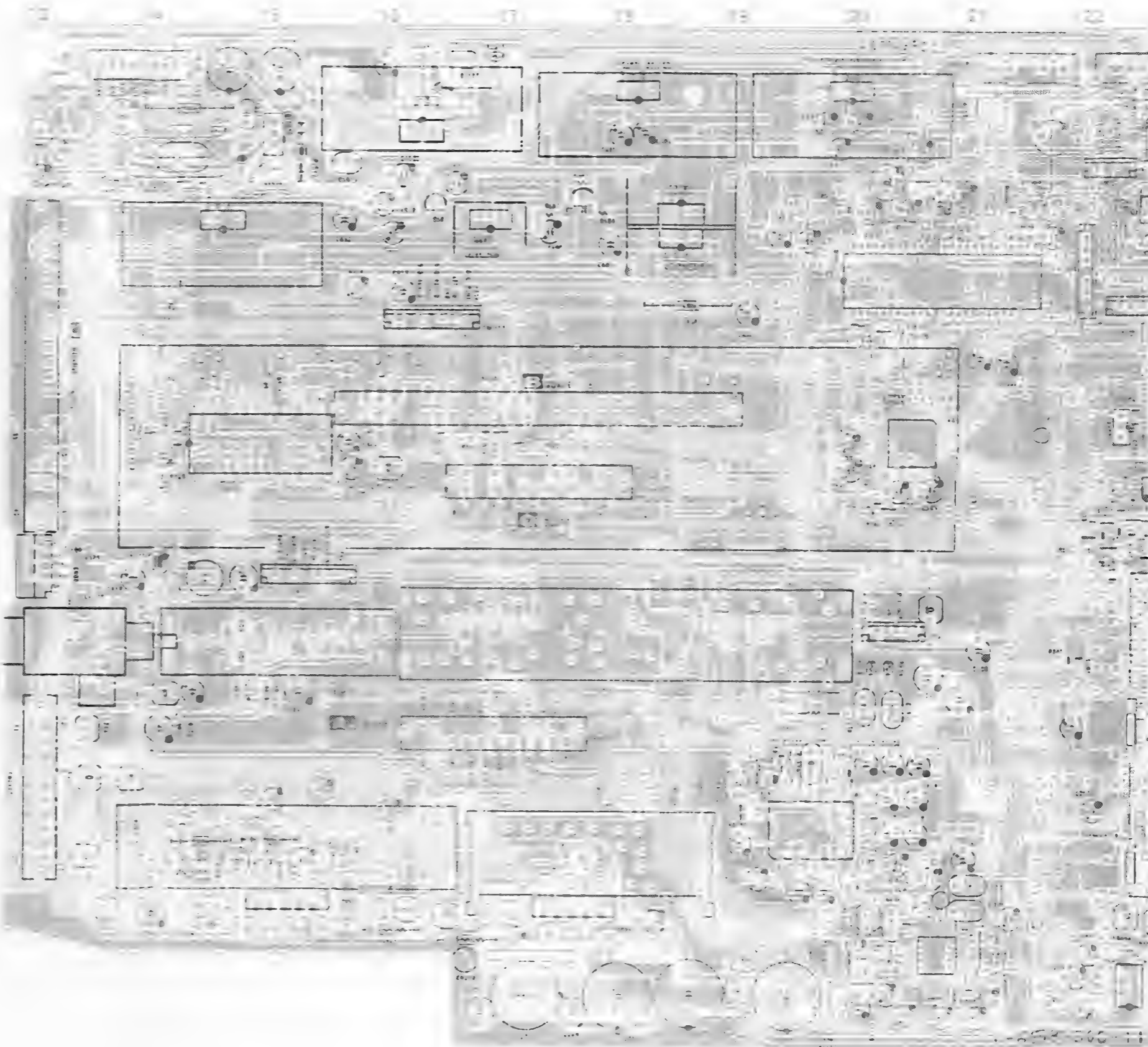
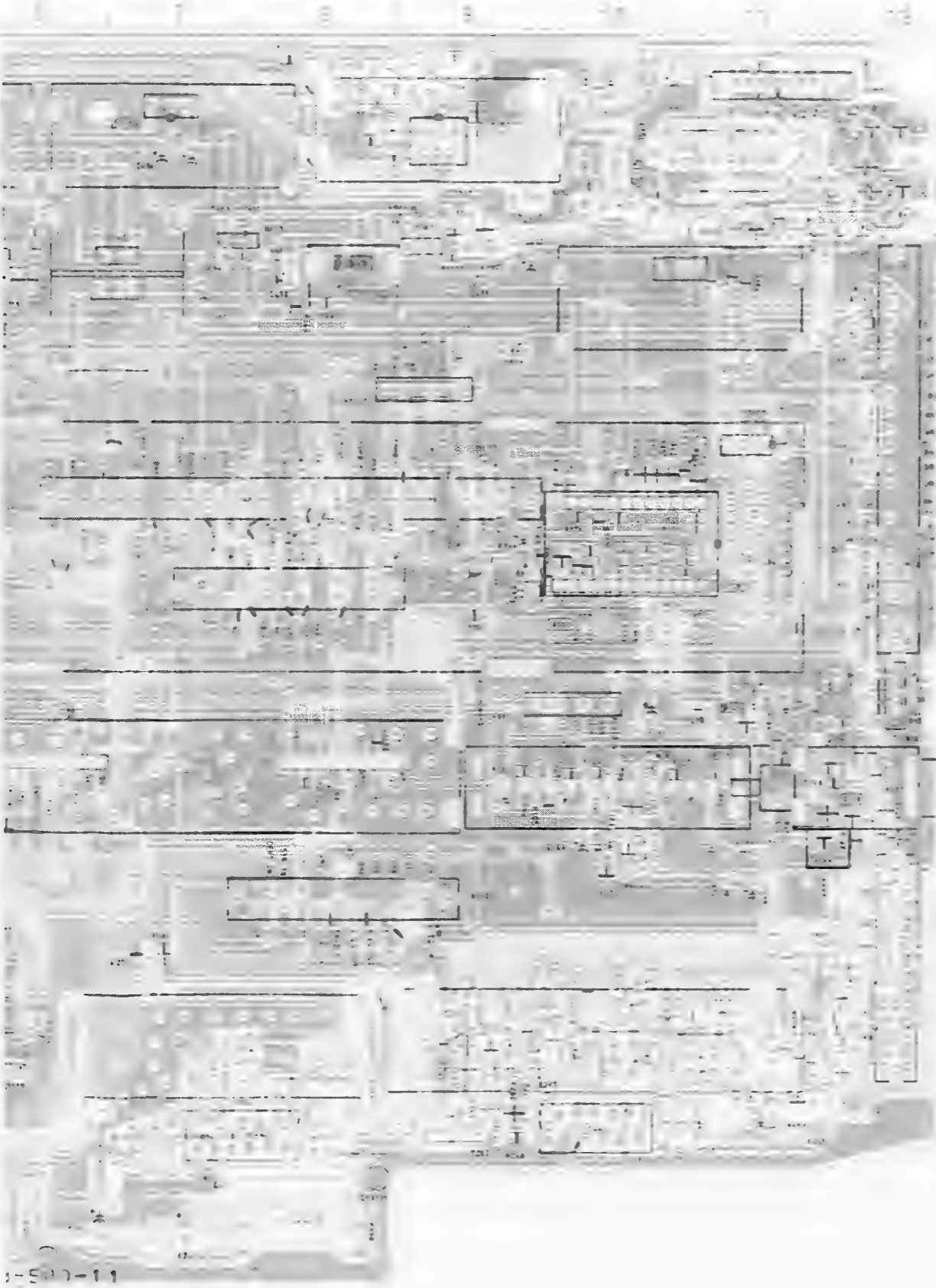
A BOARD

IC			
IC001	F-23	Q1532	C-5
IC002	F-1	Q1533	C-20
IC072	F-2	Q1544	B-5
IC201	H-21	Q1545	B-6
IC202	H-3	Q1547	C-2
IC251	H-8	Q1548	C-1
IC251	H-10	Q1549	C-2
IC351	D-11	Q2001	F-3
IC352	C-11	Q2002	G-1
IC572	D-20	Q2004	H-1
IC681	A-5	Q2005	G-3
IC682	A-7	Q2006	H-2
IC683	B-7	Q2008	H-2
IC684	B-7	Q2701	B-2
IC685	B-1		
△ IC686	B-10	DIODE	
IC1001	D-23	D001	E-3
IC1101	H-19	D003	E-23
IC1501	A-9	D063	G-1
IC1531	C-4	D069	F-10
IC2001	G-3	D071	F-10
IC2002	G-24	D073	F-10
IC2003	H-1	D075	F-10
IC2701	B-2	D077	G-1
TRANSISTOR		D078	G-1
Q002	E-3	D079	F-1
Q005	E-23	D101	F-11
Q006	E-22	D201	H-5
Q007	E-22	D251	H-9
Q008	E-22	D252	G-9
Q102	F-6	D253	F-7
Q103	F-12	D254	F-7
Q106	B-1	D255	G-7
Q107	C-1	D256	F-10
Q110	F-11	D257	F-10
Q203	E-6	D258	F-11
Q252	G-10	D259	F-11
Q253	F-11	D260	G-11
Q254	F-12	D261	H-11
Q255	G-12	D262	G-10
Q256	B-1	D263	F-11
Q257	F-9	D351	D-10
Q258	G-9	D581	E-3
Q281	A-3	D1001	C-23
Q282	A-3	D1002	D-23
Q351	D-11	D1003	E-4
Q352	E-10	D1101	G-19
Q571	E-20	D1102	G-6
Q681	E-3	D1503	A-8
Q681	B-3	D1504	B-10
Q1001	D-3	D1505	B-12
● Q1105	H-20	D1510	B-9
● Q1106	H-20	D1511	B-11
● Q1107	G-4	D1530	A-5
● Q1108	H-4	D1533	C-3
Q1503	B-10	D1534	C-4
Q1506	B-12	D1536	A-21
Q1507	A-12	D1539	B-6
Q1508	A-12	D1542	C-1
Q1510	B-9	D1543	B-4
Q1511	B-14	D2001	G-2
Q1512	B-11	D2004	F-4
Q1531	C-6	D2701	B-2

○ mark : KV-28WS3A,3B,3D,3E and 3K only  
● mark : KV-28WS3B,3E and 3U only  
△ mark : KV-28WS3A,3D,3E,3K and 3U only

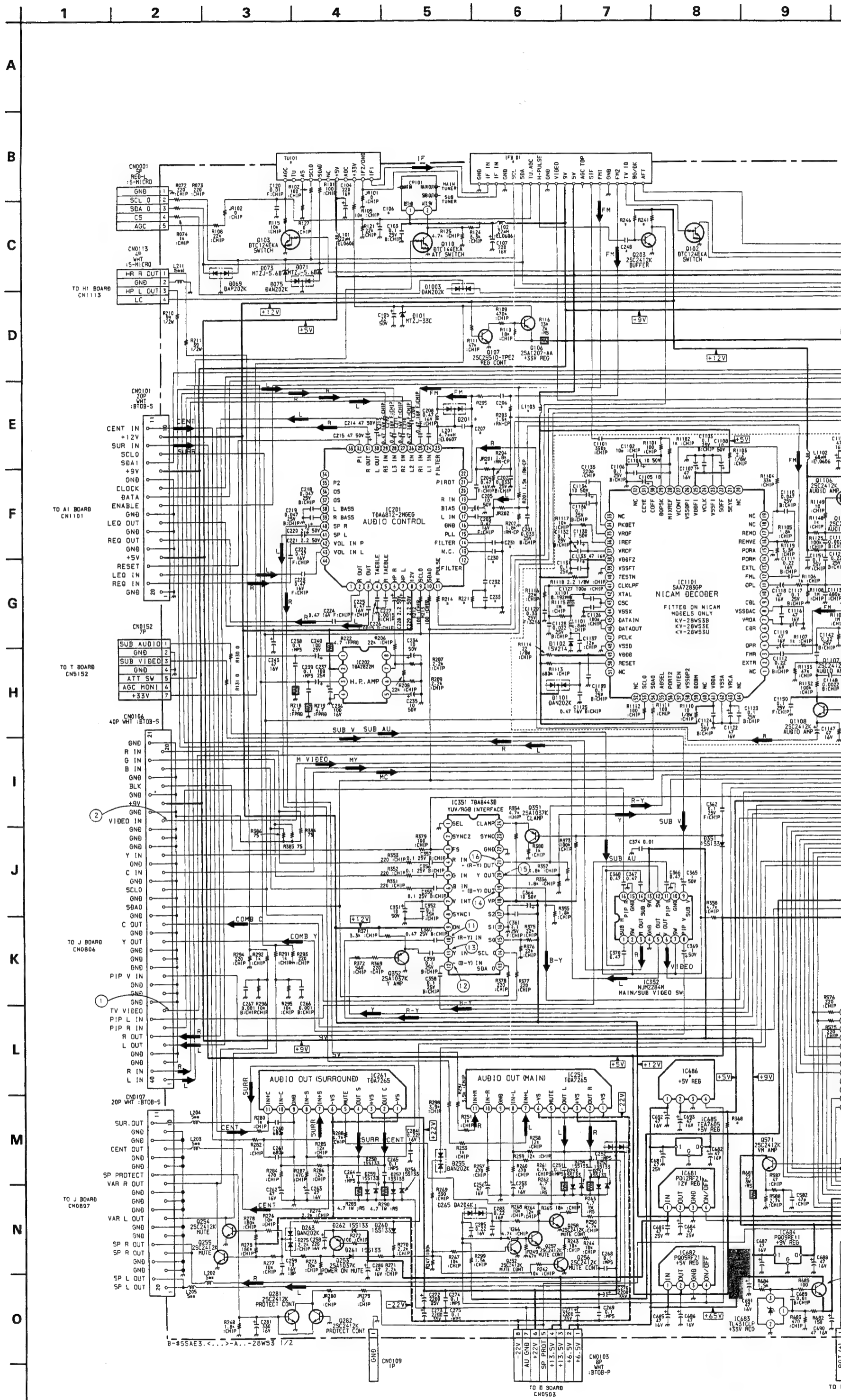


— A Board — <Component Side>

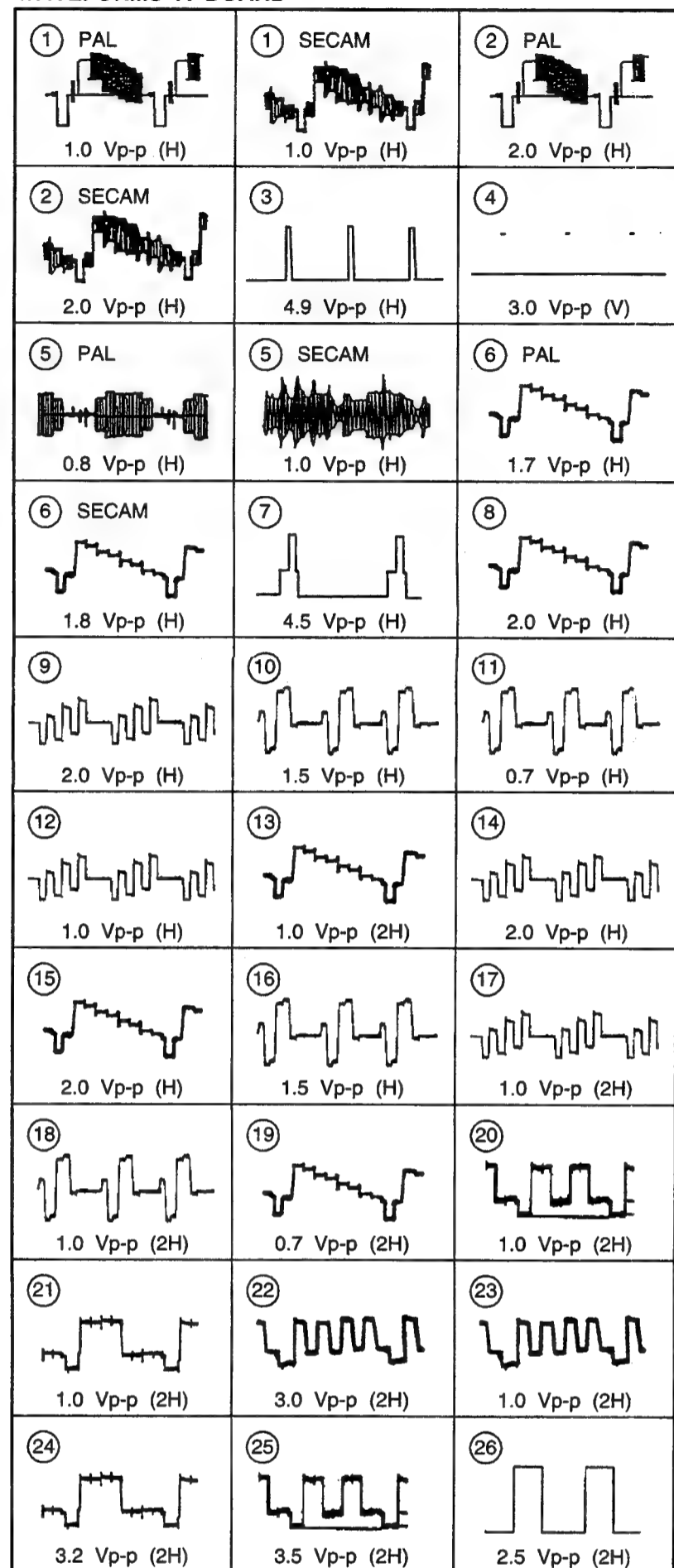


This image shows a detailed view of a Sony electronic circuit board, specifically a power supply or amplifier section. The board is densely packed with various electronic components, including resistors, capacitors, integrated circuits, and transistors. Key labels on the board include "BOARD 10", "BOARD 11", "BOARD 12", and "BOARD 13", indicating different functional sections. The board is populated with numerous components, including resistors (e.g., 10K, 100K, 1M, 100Ω), capacitors (e.g., 100μF, 10μF, 1μF, 100nF, 10nF, 100pF, 10pF, 1000pF, 10000pF, 100000pF, 1000000pF), integrated circuits (e.g., 7805, 7806, 7809, 7812, 7815, 7818, 7820, 7824, 7827, 7830, 7833, 7836, 7839, 7842, 7845, 7848, 7851, 7854, 7857, 7860, 7863, 7866, 7869, 7872, 7875, 7878, 7881, 7884, 7887, 7890, 7893, 7896, 7899, 7902, 7905, 7908, 7911, 7914, 7917, 7920, 7923, 7926, 7929, 7932, 7935, 7938, 7941, 7944, 7947, 7950, 7953, 7956, 7959, 7962, 7965, 7968, 7971, 7974, 7977, 7980, 7983, 7986, 7989, 7992, 7995, 7998, 8001, 8004, 8007, 8010, 8013, 8016, 8019, 8022, 8025, 8028, 8031, 8034, 8037, 8040, 8043, 8046, 8049, 8052, 8055, 8058, 8061, 8064, 8067, 8070, 8073, 8076, 8079, 8082, 8085, 8088, 8091, 8094, 8097, 8100, 8103, 8106, 8109, 8112, 8115, 8118, 8121, 8124, 8127, 8130, 8133, 8136, 8139, 8142, 8145, 8148, 8151, 8154, 8157, 8160, 8163, 8166, 8169, 8172, 8175, 8178, 8181, 8184, 8187, 8190, 8193, 8196, 8199, 8202, 8205, 8208, 8211, 8214, 8217, 8220, 8223, 8226, 8229, 8232, 8235, 8238, 8241, 8244, 8247, 8250, 8253, 8256, 8259, 8262, 8265, 8268, 8271, 8274, 8277, 8280, 8283, 8286, 8289, 8292, 8295, 8298, 8301, 8304, 8307, 8310, 8313, 8316, 8319, 8322, 8325, 8328, 8331, 8334, 8337, 8340, 8343, 8346, 8349, 8352, 8355, 8358, 8361, 8364, 8367, 8370, 8373, 8376, 8379, 8382, 8385, 8388, 8391, 8394, 8397, 8400, 8403, 8406, 8409, 8412, 8415, 8418, 8421, 8424, 8427, 8430, 8433, 8436, 8439, 8442, 8445, 8448, 8451, 8454, 8457, 8460, 8463, 8466, 8469, 8472, 8475, 8478, 8481, 8484, 8487, 8490, 8493, 8496, 8499, 8502, 8505, 8508, 8511, 8514, 8517, 8520, 8523, 8526, 8529, 8532, 8535, 8538, 8541, 8544, 8547, 8550, 8553, 8556, 8559, 8562, 8565, 8568, 8571, 8574, 8577, 8580, 8583, 8586, 8589, 8592, 8595, 8598, 8601, 8604, 8607, 8610, 8613, 8616, 8619, 8622, 8625, 8628, 8631, 8634, 8637, 8640, 8643, 8646, 8649, 8652, 8655, 8658, 8661, 8664, 8667, 8670, 8673, 8676, 8679, 8682, 8685, 8688, 8691, 8694, 8697, 8700, 8703, 8706, 8709, 8712, 8715, 8718, 8721, 8724, 8727, 8730, 8733, 8736, 8739, 8742, 8745, 8748, 8751, 8754, 8757, 8760, 8763, 8766, 8769, 8772, 8775, 8778, 8781, 8784, 8787, 8790, 8793, 8796, 8799, 8802, 8805, 8808, 8811, 8814, 8817, 8820, 8823, 8826, 8829, 8832, 8835, 8838, 8841, 8844, 8847, 8850, 8853, 8856, 8859, 8862, 8865, 8868, 8871, 8874, 8877, 8880, 8883, 8886, 8889, 8892, 8895, 8898, 8901, 8904, 8907, 8910, 8913, 8916, 8919, 8922, 8925, 8928, 8931, 8934, 8937, 8940, 8943, 8946, 8949, 8952, 8955, 8958, 8961, 8964, 8967, 8970, 8973, 8976, 8979, 8982, 8985, 8988, 8991, 8994, 8997, 9000, 9003, 9006, 9009, 9012, 9015, 9018, 9021, 9024, 9027, 9030, 9033, 9036, 9039, 9042, 9045, 9048, 9051, 9054, 9057, 9060, 9063, 9066, 9069, 9072, 9075, 9078, 9081, 9084, 9087, 9090, 9093, 9096, 9099, 9102, 9105, 9108, 9111, 9114, 9117, 9120, 9123, 9126, 9129, 9132, 9135, 9138, 9141, 9144, 9147, 9150, 9153, 9156, 9159, 9162, 9165, 9168, 9171, 9174, 9177, 9180, 9183, 9186, 9189, 9192, 9195, 9198, 9201, 9204, 9207, 9210, 9213, 9216, 9219, 9222, 9225, 9228, 9231, 9234, 9237, 9240, 9243, 9246, 9249, 9252, 9255, 9258, 9261, 9264, 9267, 9270, 9273, 9276, 9279, 9282, 9285, 9288, 9291, 9294, 9297, 9300, 9303, 9306, 9309, 9312, 9315, 9318, 9321, 9324, 9327, 9330, 9333, 9336, 9339, 9342, 9345, 9348, 9351, 9354, 9357, 9360, 9363, 9366, 9369, 9372, 9375, 9378, 9381, 9384, 9387, 9390, 9393, 9396, 9399, 9402, 9405, 9408, 9411, 9414, 9417, 9420, 9423, 9426, 9429, 9432, 9435, 9438, 9441, 9444, 9447, 9450, 9453, 9456, 9459, 9462, 9465, 9468, 9471, 9474, 9477, 9480, 9483, 9486, 9489, 9492, 9495, 9498, 9501, 9504, 9507, 9510, 9513, 9516, 9519, 9522, 9525, 9528, 9531, 9534, 9537, 9540, 9543, 9546, 9549, 9552, 9555, 9558, 9561, 9564, 9567, 9570, 9573, 9576, 9579, 9582, 9585, 9588, 9591, 9594, 9597, 9600, 9603, 9606, 9609, 9612, 9615, 9618, 9621, 9624, 9627, 9630, 9633, 9636, 9639, 9642, 9645, 9648, 9651, 9654, 9657, 9660, 9663, 9666, 9669, 9672, 9675, 9678, 9681, 9684, 9687, 969

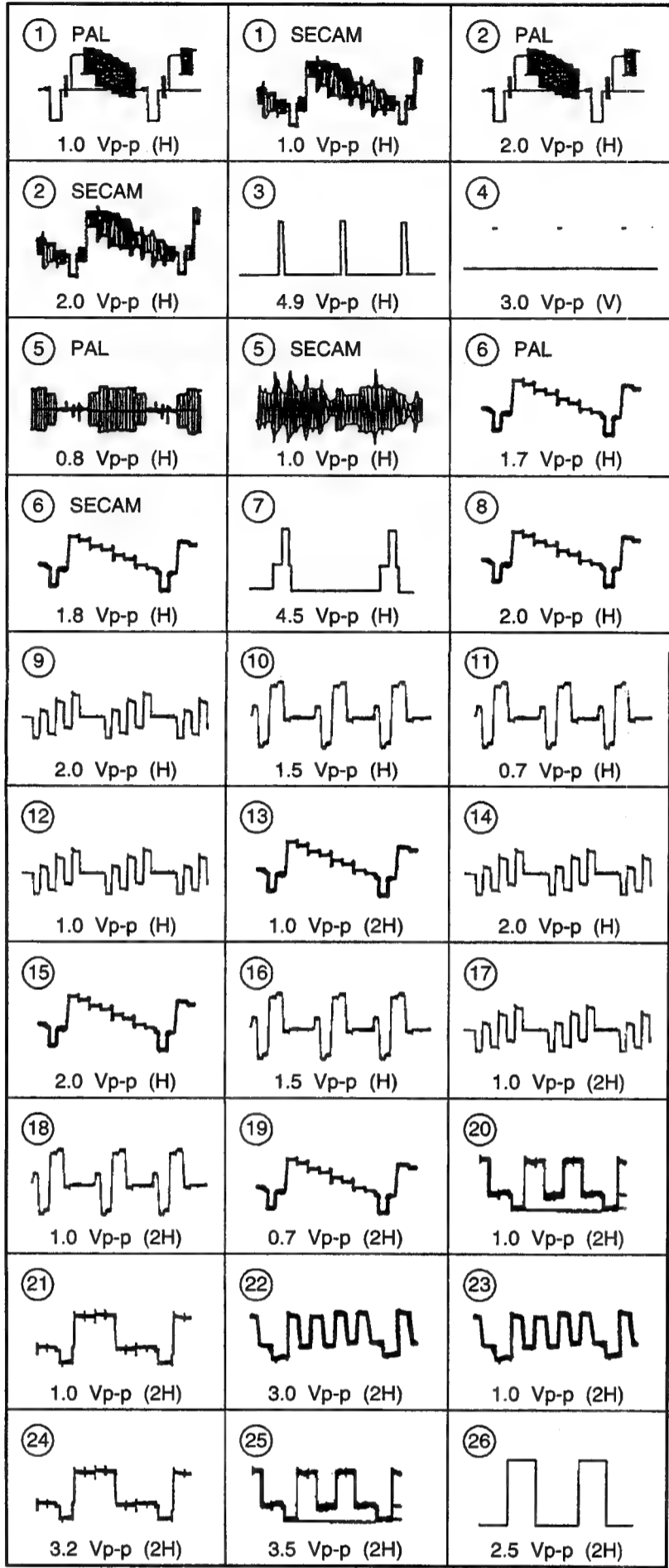
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RF No.	47MF 50V	000MF 16V	47MF 50V	47MF 50V	47MF 50V	47MF 50V
Q106	0 C002MF	0 C002MF	0 C002MF	0 C002MF	0 C002MF	-
Q107	0 C011MF	0 C011MF	0 C011MF	0 C011MF	0 C011MF	-
Q130	1MF	1MF	1MF	1MF	1MF	-
Q131	1MF	1MF	1MF	1MF	1MF	-
Q132	0 C033MF	0 C033MF	0 C033MF	0 C033MF	0 C033MF	-
Q133	680P	680P	680P	680P	680P	-
Q148	150P	150P	150P	150P	150P	-
Q201	DA204K	DA204K	DA204K	DA204K	DA204K	-
Q206	PC05RF21	-	PC05RF21	PC05RF21	PC05RF21	PC05RF21
IFH101	IFH-389WE	IFH-349FX	IFH-349WE	IFH-389WE	IFH-340EE	IFH-349GR
U105	-	88U4	-	88U4	-	88U4
JR201	0 CHIP	-	0 CHIP	-	0 CHIP	-
JR202	0 CHIP	-	0 CHIP	-	0 CHIP	-
Q223	25C0412K	25C0412K	35C0412K	25C0412K	25C0412K	-
R201	5K	50K	5K	5K	5K	-
R211	100	100	50	100	100	-
R221	5K	5K	5K	5K	5K	-
R241	47K	47K	47K	47K	47K	-
R242	100K	100K	100K	100K	100K	-
R255	-	-	-	0 CHIP	0 CHIP	CHIP
R261	-	0 CHIP	-	-	-	-
R262	0 CHIP	-	0 CHIP	0 CHIP	0 CHIP	0 CHIP
R263	0 CHIP	-	0 CHIP	-	-	-
R264	0 CHIP	-	0 CHIP	0 CHIP	0 CHIP	0 CHIP
R265	0 CHIP	-	0 CHIP	0 CHIP	0 CHIP	0 CHIP
R266	-	0 CHIP	-	-	-	-
R267	-	0 CHIP	-	-	-	-
R268	0 CHIP	-	0 CHIP	0 CHIP	0 CHIP	0 CHIP
R269	0 CHIP	-	0 CHIP	-	-	-
R270	10K	10K	10K	10K	10K	10K
R272	10K	10K	10K	10K	10K	10K
R275	22K	22K	22K	22K	-	22K
U107	UV131G	UV131G	UV131B	UV131G	UV131G	U134K







# WAVEFORMS A BOARD



Ref.No.	Pin No.	Voltage (V)	Ref.No.	Pin No.	Voltage (V)	Ref.No.	Pin No.	Voltage (V)
IC1001	1	0	IC201	44	GND	IC1501	5	3.6
	2	0		45-47	2.1		6	3.0
	3	5.0		48	GND		7	3.1
	4	4.0		49-50	4.4		8	1.7
	5-6	-		51-52	-		9	1.8
	7	0		53-54	4.0		10	0.8
	8-9	-		55-60	-		11	0.5
	10	0.2		61	4.4		12	GND
	11	-		62	GND		13	9.0
	12	1.5		63	2.2		14	0
	13-18	-		64	-		15	3.6
	19	1.0		1	0		16	4.0
	20-25	-		2-7	6.1		17	4.4
	26	GND		8	12.0		18	8.7
	27	2.0		9-10	4.0		19-21	3.6
	28	2.5		11	0.1		22	0.8
	29	2.5		12	0		23	2.4
	30	4.0		13-15	3.0		24	5.0
	31-54	-		16	0		25	2.1
	55	GND		17-19	6.1		26	2.2
	56	5.0		20	0		27	2.1
	57	5.0		21	6.1		28	8.0
	58	GND		22	0		29-32	4.0
	59-60	-		23-31	6.1		33	5.1
	61	6.3		32-35	0		34	0.2
	62	4.2		36-43	6.1		35	2.4
	63	0		44	0		36	9.0
	64	0		1	5.4		37	GND
IC1101	1-2	-	IC202	2	12.0		38	0
	3	1.0		3	5.4		39	5.0
	4	2.2		4	GND		40	2.1
	5-6	-		5	0.5		41	2.2
	7	2.2		6-7	0		42	4.2
	8	0		8	0.5		43	0
	9-10	-		1-3	4.4		44	-
	11	2.2		4.0	-		45-47	4.6
	12	1.0		5-7	-		48	4.4
	13-14	-		8.0	0	IC1501	1	2.2
	15	GND		9.0	0.2		2	14.0
	16	2.2		1-4	GND		3	-14.0
	17	4.0		5-6	5.0		4	-16.0
	18-21	-		7	GND		5	-1.4
	22	2.2		8	5.0		6	14.5
	23	0	IC251/261	1	-20.0		7	2.2
	24	-		2	0	IC681	1	13.3
	25	2.2		3	20.0		2	12.0
	26	-		4	0		3	GND
	27-30	2.1		5	10.0		4	2.3
	31-33	-		6	-20.0	IC682	1	5.7
	34	1.8		7-8	0		2	5.0
	35-37	2.1		9	GND		3	GND
	38	4.1		10-11	0		4	2.3
	39	GND	IC1531	1	3.7	IC683	1	2.4
	40	-		2	0.3		2	GND
	41	1.7		3	5.8		3	4.0
	42	3.1		4	GND			
	43	2.1						

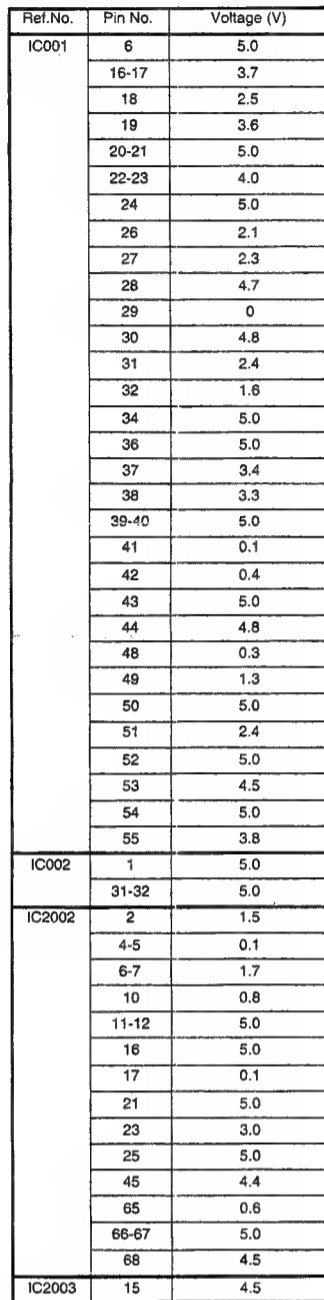
All Voltages are indicated in Volts DC

Ref.No.	Pin No.	Voltage (V)
IC684	1	11.9
	2	GND
	3	9.0
IC685	1	5.8
	2	GND
	3	5.0
IC686	1	5.6
	2	5.0
	3	GND
	4	2.3
IC572	1-3	6.0
	6	9.0
	7	GND
	8-10	9.0
	11-12	GND
	13-14	4.0
	15	0.8
	16	0.6
	17	0.5
	18-20	0.3
	21-22	NC
	23	0.2
	25	4.0
	26	4.7
	28-30	GND
	31	9.0
	32	GND
	33-35	4.4
	37-39	GND
	41	2.5
	42	GND
	44-45	2.7
	46	2.6
	47	8.7
	48	NC

Ref.No.	Pin No.	(B) Base	(C) Collector	(E) Emitter
Q102	4.7	0	0	
Q103	0	1.7	0	
Q106	31.4	32.0	32.0	
Q107	0.5	0	0	
Q203	0.6	0.1	0	
Q251	0.6	0	0	
Q252	0	0.6	0	
Q253	13.4	-0.4	13.4	
Q254	-2.1	0	0	
Q255	-2.0	0	0	
Q256	-0.1	2.3	0	
Q257	0.6	0	0	
Q259	21.5	10.5	21.1	
Q260	0	21.5	0	
Q351	2.8	1.7	3.5	
Q352	1.8	0	2.5	
Q571	6.4	9.0	5.7	
Q581	0.6	0	0	
Q1001	0.3	0	1.0	
Q1105	3.0	5.6	2.4	
Q1107	3.0	5.8	2.4	
Q1108	5.8	11.8	5.2	
Q1502	0.4	9.0	-3.7	
Q1531	5.6	0	6.1	
Q1532	9.0	4.4	9.0	
Q1533	0.5	0.4	0	
Q1544	1.1	4.5	0.6	
Q1545	4.5	9.0	4.0	
Q1447	4.4	-9.0	5.0	
Q1548	6.4	9.0	5.7	
Q1549	0.9	-0.2	1.4	
Q1532	-1.2	3.0	-1.8	



52 R051  
0 0  
HIP :CHIP  
M



Pin No.	(B) Base	(C) Collector	(E) Emitter
Q002	4.2	4.7	4.8
Q005	-0.1	0	0
Q006	0	4.8	0.8
Q007	4.8	0.9	0.8
Q008	0.3	4.8	0
Q2001	0.3	5.0	0
Q2002	0	4.8	0
Q2004	0.3	4.0	0
Q2005	3.8	12.0	3.1
Q2006	0.1	0	0
Q2008	4.0	0.1	0

## C

IC401	C-4
IC402	D-9

## TRANSISTOR

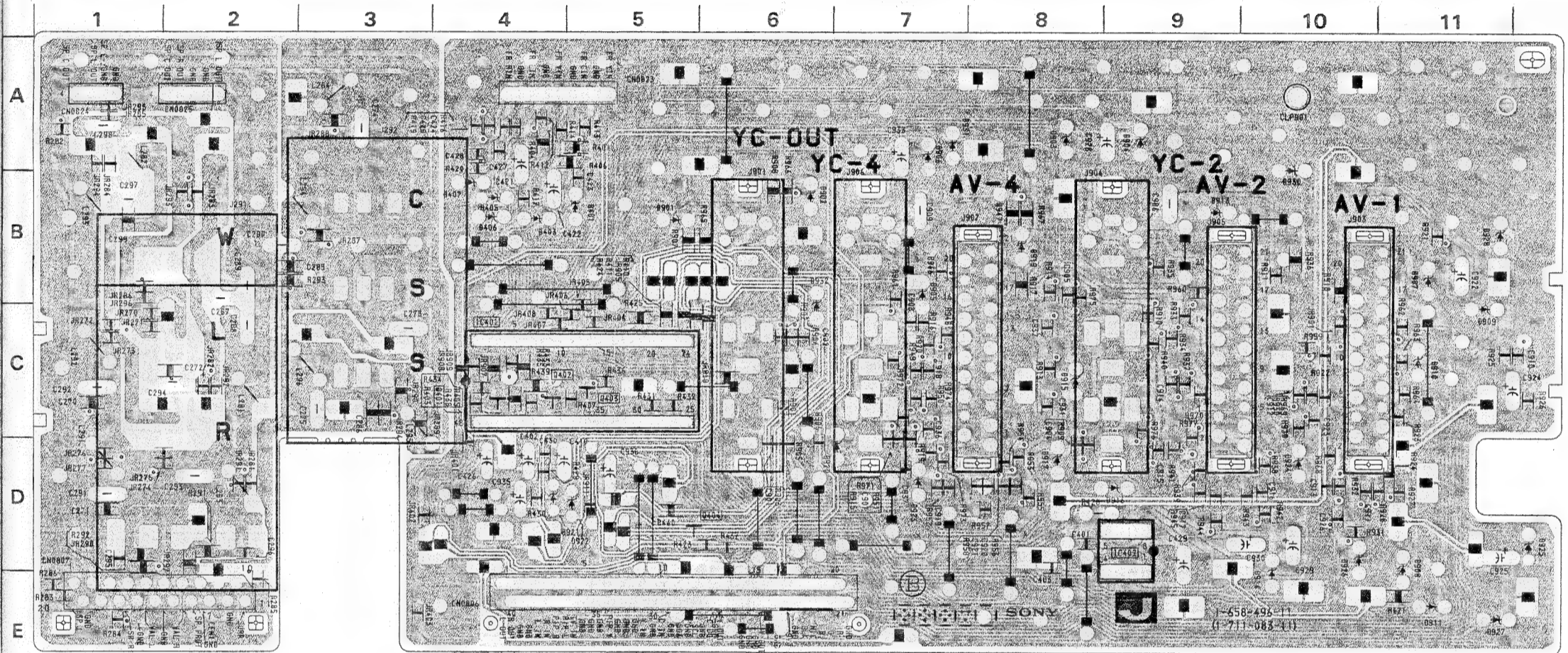
Q401	C-4
Q402	C-4
Q403	C-5
Q404	D-6

## DIODE

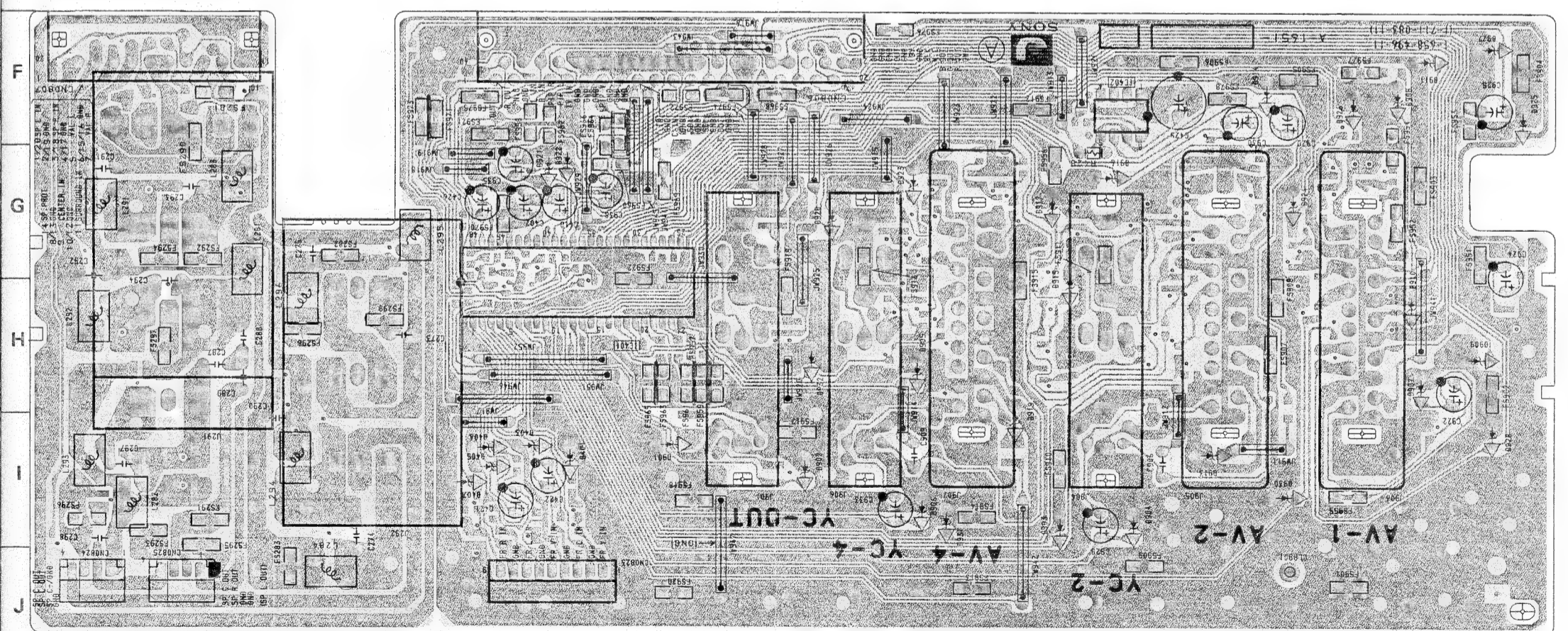
D401	B-5
D403	B-4
D405	B-4
D406	B-4
D407	B-4
D901	B-5
D902	B-6
D903	A-8
D904	A-9
D905	B-7
D906	A-7
D907	B-11
D908	E-11
D909	C-11
D910	C-11
D911	E-11
D913	B-9
D914	E-10
D915	C-8
D916	D-9
D917	D-8
D919	B-8
D920	D-6
D921	D-4
D922	D-5
D923	D-7
D924	D-10
D925	D-11
D926	D-10
D927	E-11
D928	B-11
D930	B-10
D931	A-7
D932	B-6

**J** [ VIDEO/AUDIO IN/OUT,  
SPEAKER TERMINAL ]

— J Board — <Conductor Side>

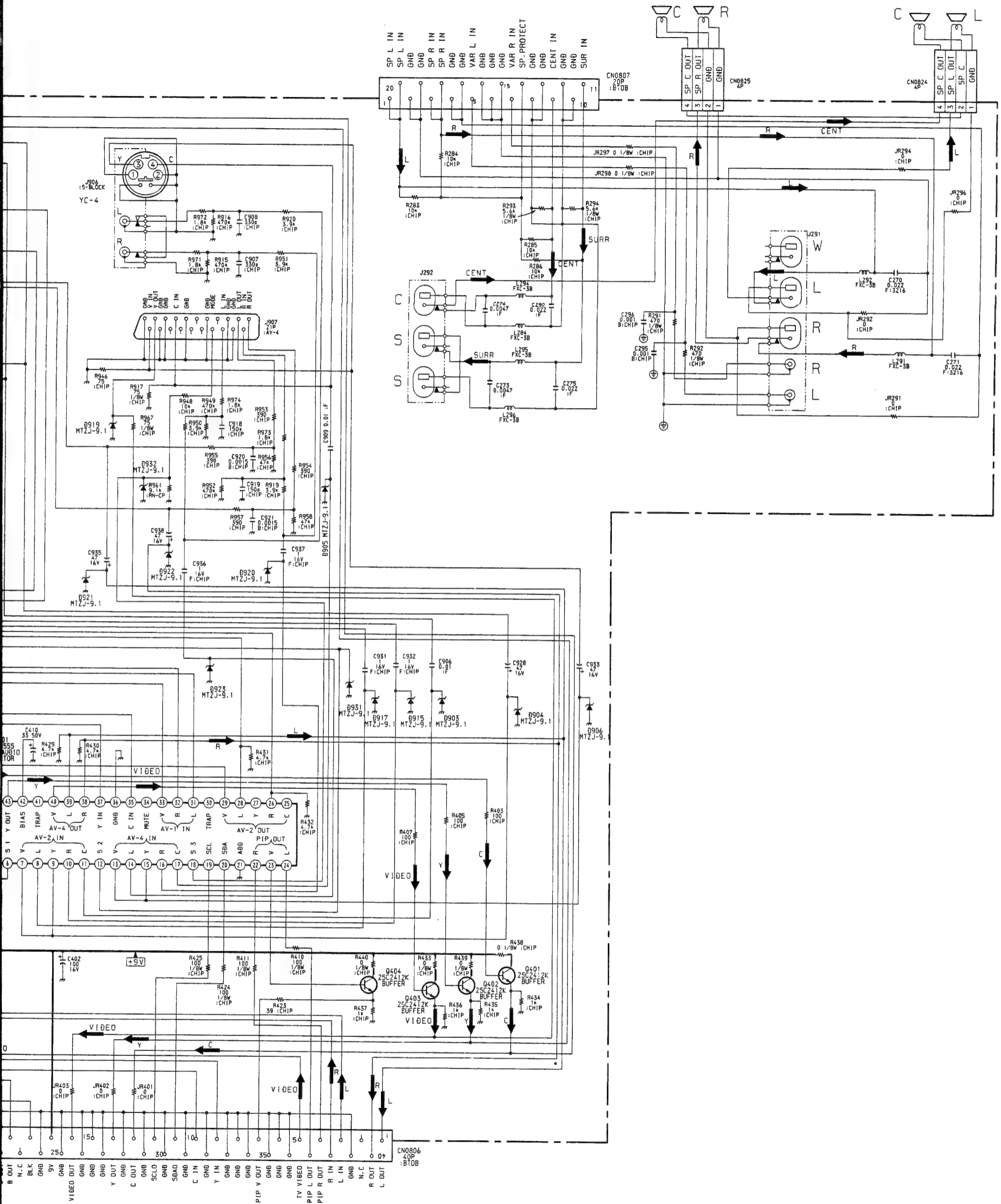


— J Board — <Component Side>





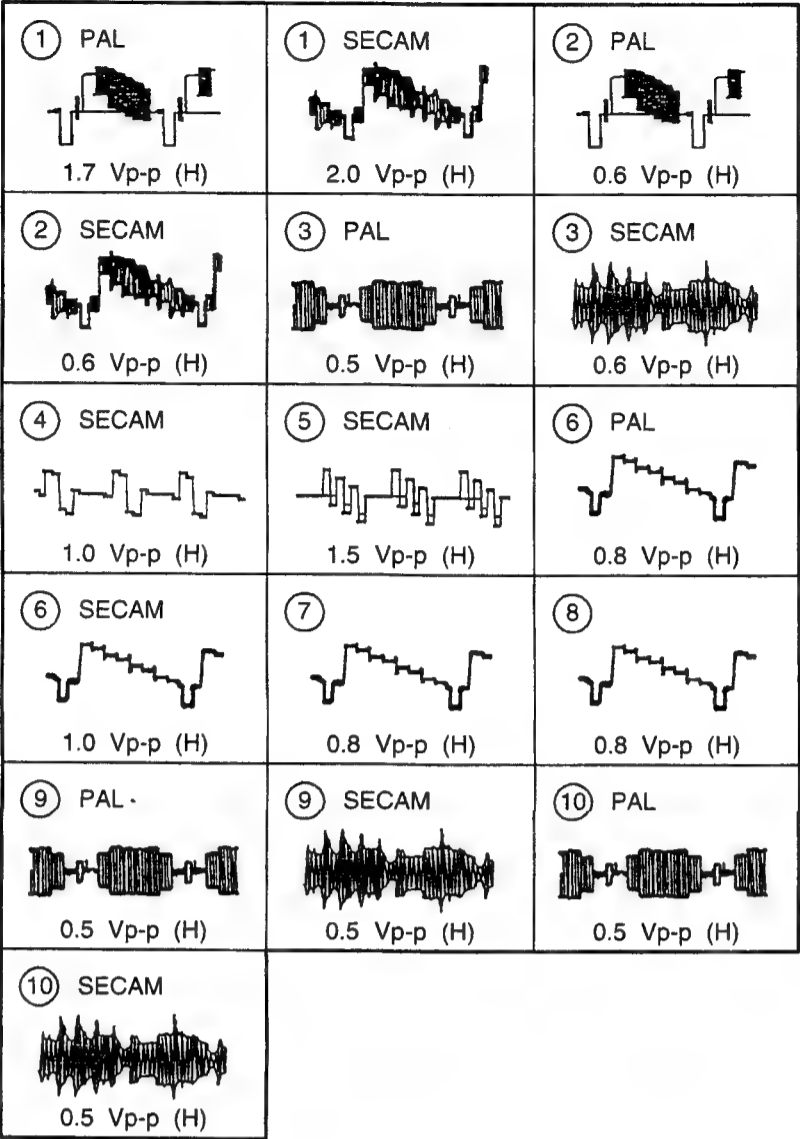
TO A BOARD  
CN0107



TO A BOARD  
CN0106



WAVEFORMS B1 BOARD



B1 BOARD (1/3) \* MARK

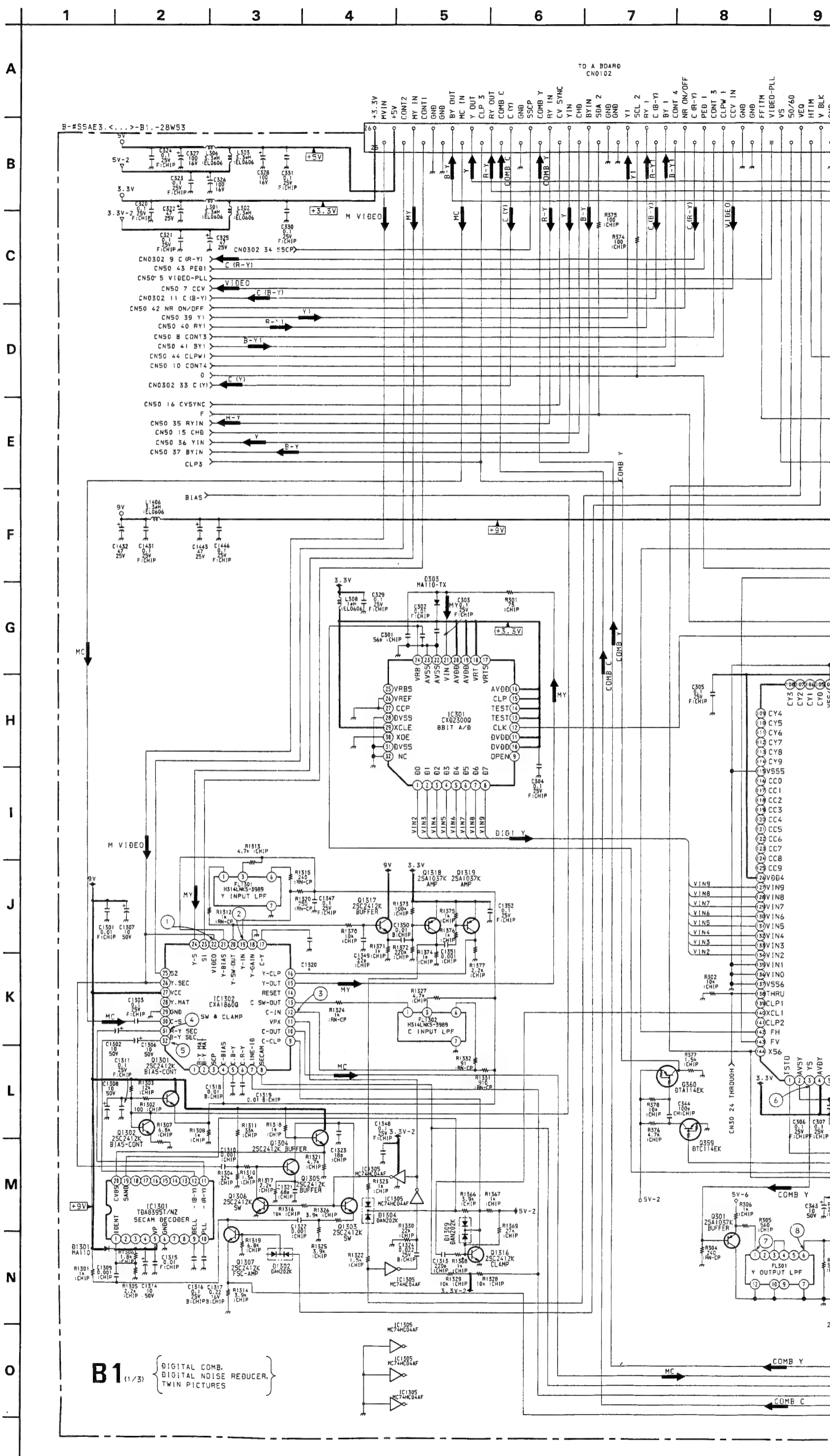
Model	28WS3A	28WS3B	28WS3D	28WS3E	28WS3K	28WS3U
Ref. No.						
C512	0.022MF	-	0.022MF	0.022MF	0.022MF	0.022MF
C535	0.1MF	0.022MF	0.1MF	0.1MF	0.1MF	0.1MF
C1320	0.1MF	0.022MF	0.1MF	0.1MF	0.1MF	0.1MF
Q506	2SA1037K	-	2SA1037K	2SA1037K	2SA1037K	2SA1037K
R514	1K	-	1K	1K	1K	1K
R515	56K	-	56K	56K	56K	56K
R528	100	-	100	100	100	100
R532	-	0	-	-	-	-
R538	-	10K	-	-	-	-
R539	-	10K	-	-	-	-
R540	-	10K	-	-	-	-
R560	1M	-	1M	1M	1M	1M
R571	47	-	47	47	47	47
R577	-	0	-	-	-	-
R578	0	-	0	0	0	0

Ref.No.	Pin No.	Voltage (V)	Ref.No.	Pin No.	Voltage (V)	Ref.No.	Pin No.	Voltage (V)
IC301	10-11	3.2		53	3.1		10	2.4
	12	1.1		63	3.1		11	3.0
	13-16	3.2		65-66	3.1		12-13	2.8
	18-20	3.2		67	4.2		15	2.3
	21	2.3		68	3.1		16	0.1
	24	1.7		69	4.1		17	3.0
IC302	29	3.2		70	3.1		19-21	2.8
	1	3.0		72	3.1		22	3.6
	3	0.4		73	1.6		24	3.6
	4	3.2		75	0.1		26	3.6
	6	1.4		76-77	3.1		27	8.8
	7-8	1.0		89	3.1		30	4.2
	9	0.4	IC503	31-33	1.2		31-32	4.0
	12	3.2		35	1.2	All Voltages are indicated in Volts DC		
	13	0.5		37	1.9			
	21	2.4		40	2.0			
	22-23	3.2		41-42	5.0			
	24	0.1		43-44	3.0			
	25	2.2		46	3.0			
	27	0.1		48	3.0			
	28-29	4.2		50	0.6			
	30	3.0		52-53	4.8			
	31-35	1.2		54	0.6			
	39	4.8		56	4.8			
	40	2.6		58	0.6			
	43	4.8		60-61	4.8			
	45	3.1		62	1.4			
	46	3.1	IC1505	2	1.2			
	47-48	1.6		4	1.2			
	49	1.2		6	1.2			
	51	1.2		14	1.5			
	53	3.2		16	1.5			
	60	3.1		18	1.5			
	93	3.1		20	4.8			
IC502	3	3.1	IC1506	2	1.0			
	5	1.0		4	1.0			
	6	1.6		6	1.0			
	7-9	1.0		8	1.0			
	11	1.5		12	1.3			
	12	3.2		14	1.4			
	13	1.5		16	1.4			
	15	1.8		18	1.4			
	16	1.8		20	4.8			
	17	1.2	IC1301	1	4.4			
	19-20	1.6		5	8.0			
	21	3.2		9	3.2			
	23-25	1.6		10	4.2			
	26	1.7		11-12	2.9			
	27	3.1		19	0.5			
	28	0.3		20	7.0			
	29	1.1	IC1302	4	2.8			
	30	1.6		5-6	4.2			
	31	1.2		7	2.2			
	32-33	1.5		8	0.1			
	34-35	1.3		9	0.2			

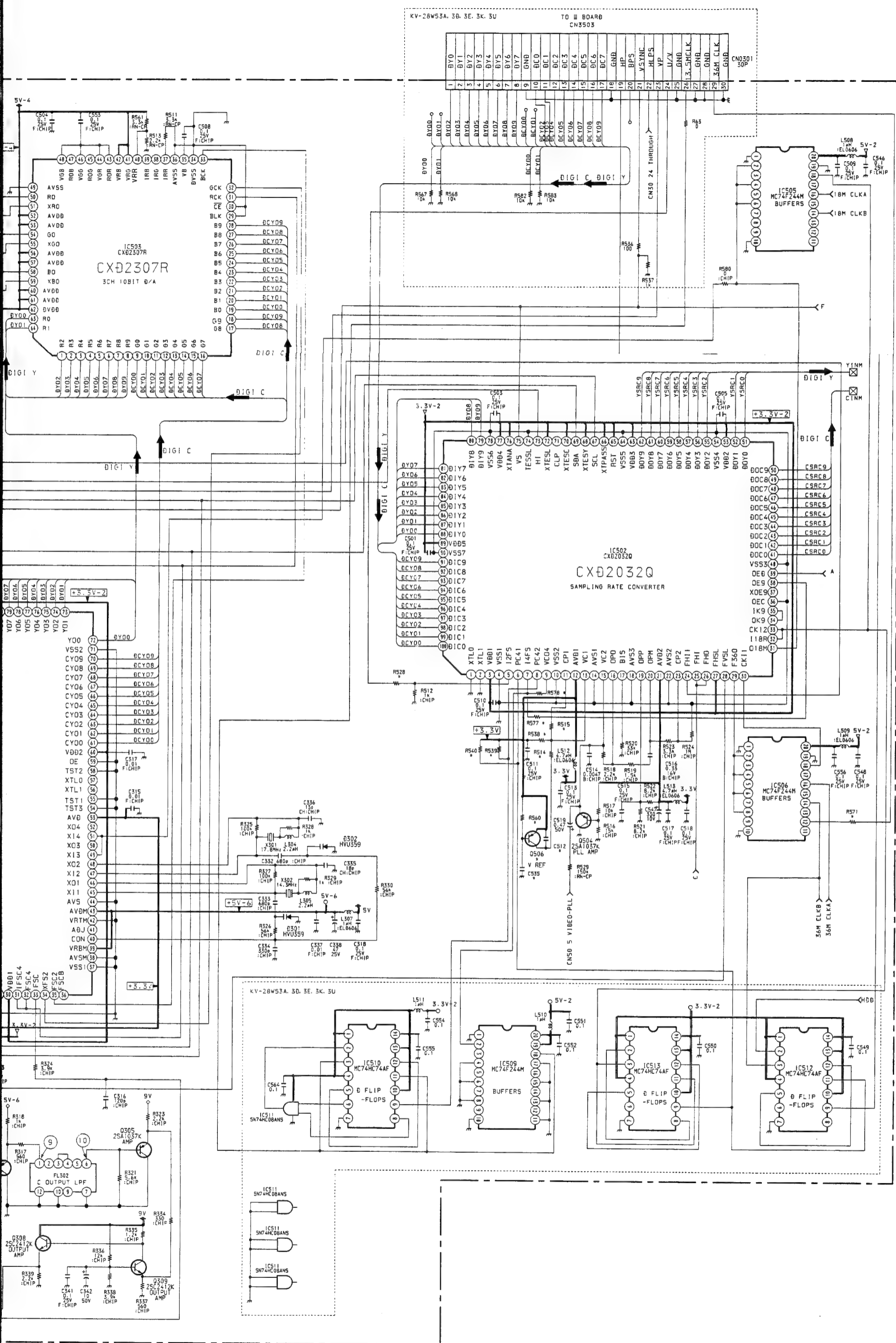
Pin No.	(B) Base	(C) Collector	(E) Emitter
Ref.No.			
Q301	0.4	0	1.1
Q302	1.0	0	1.6
Q303	1.0	0	1.6
Q304	0.5	0	1.2
Q305	1.0	0	1.7
Q306	2.1	6.1	1.4
Q307	6.2	8.8	5.6
Q308	6.2	8.8	5.6
Q309	2.1	6.2	1.5
Q501/502/503	0.6	0	1.3
Q504	1.9	0	1.9
Q507	1.2	0	1.9
Q508	1.3	0	1.9
Q509	1.2	0	1.9
Q1301	3.4	8.8	2.8
Q1302	3.4	3.4	2.9
Q1303	0	7.5	0
Q1304	7.5	8.8	6.9
Q1307	0	8.7	0.8
Q1316	0.6	0.3	0
Q1318	3.2	0.2	3.2
Q1319	3.2	0.1	3.2

	28WS3K	28WS3U
	0.022MF	0.022MF
	0.1MF	0.1MF
	0.1MF	0.1MF
	2SA1037K	2SA1037K
	1K	1K
	56K	56K
	100	100
	-	-
	-	-
	1M	1M
	47	47
	-	-
	0	0

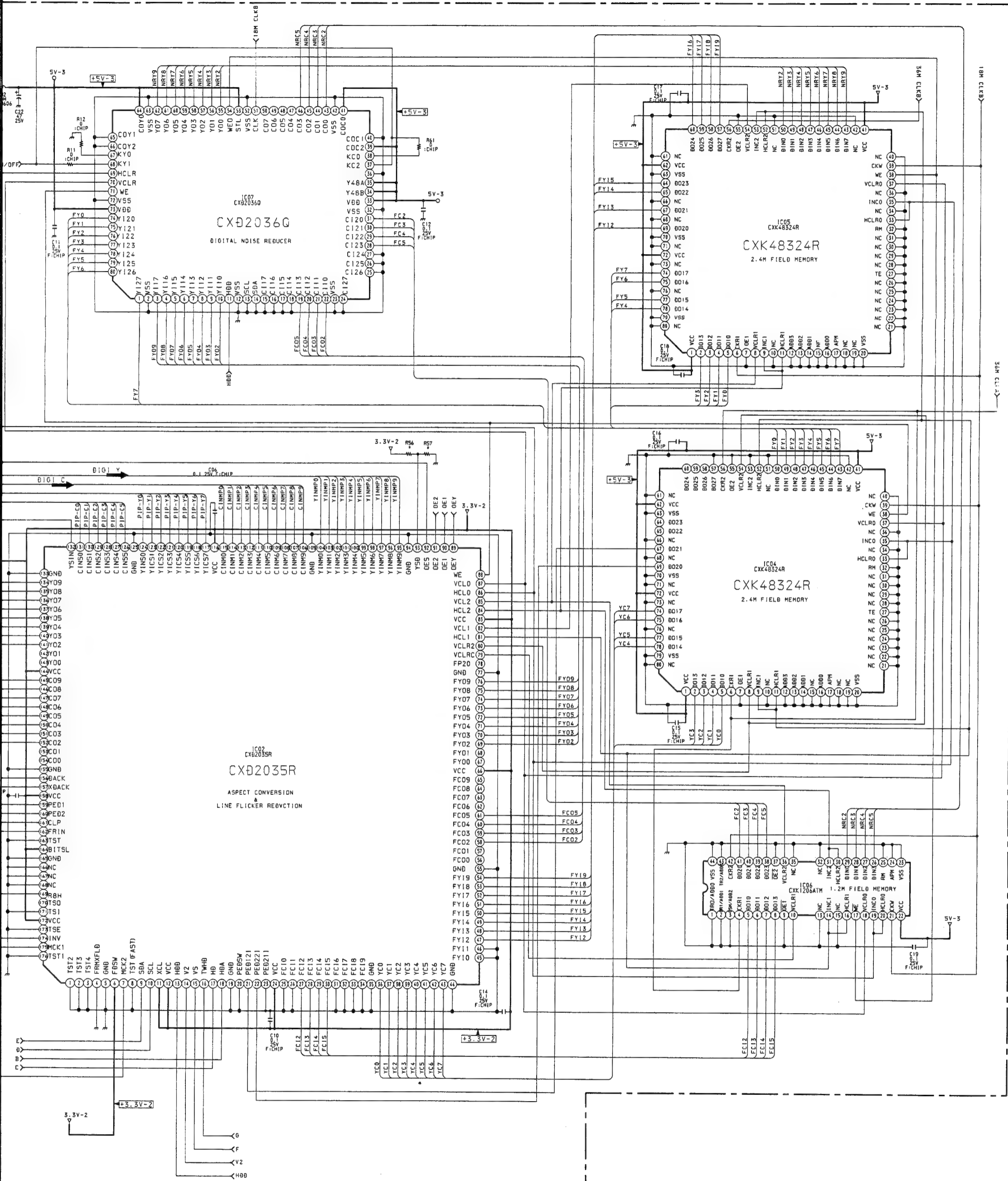
Pin No.	(B) Base	(C) Collector	(E) Emitter
01	0.4	0	1.1
02	1.0	0	1.6
03	1.0	0	1.6
04	0.5	0	1.2
05	1.0	0	1.7
06	2.1	6.1	1.4
07	6.2	8.8	5.6
08	6.2	8.8	5.6
09	2.1	6.2	1.5
01/502/503	0.6	0	1.3
04	1.9	0	1.9
07	1.2	0	1.9
08	1.3	0	1.9
09	1.2	0	1.9
301	3.4	8.8	2.8
302	3.4	3.4	2.9
303	0	7.5	0
304	7.5	8.8	6.9
307	0	8.7	0.8
316	0.6	0.3	0
318	3.2	0.2	3.2
319	3.2	0.1	3.2











Ref.No.	Pin No.	Voltage (V)	Ref.No.	Pin No.	Voltage (V)
IC01	27	1.2	IC06	4	1.3
	28-29	1.5		10	0
	32	1.1		17	1.0
	34-35	1.9		21	1.2
	37	0.3		22	4.8
	39	1.1		42	1.3
	41	1.1	IC07	11	1.6
	42	3.0		33-35	4.8
	43-48	4.8		39	4.8
IC02	6	3.1		41	4.8
	7	1.3		51	1.4
	9-10	4.2		53	4.8
	11-12	3.0		54	1.0
	13	1.6		64	4.8
	15	0.1		71	0.7
	16	1.6		73	4.8
	17	1.7			
	18	1.6			
	21-22	0			
	24	3.1			
	66	3.1			
	79-82	0			
	83	3.0			
	84-87	0			
	88	0.7			
	89-91	3.0			
	92-93	0			
	132	0			
	144	3.1			
	156	1.5			
	157	3.1			
	158-159	0			
	160	0.1			
	164	3.1			
	172	3.1			
	175	1.5			
IC04	1	4.8			
	6	1.2			
	8-9	0			
	11	0			
	38	0.7			
	39	1.3			
	41	4.8			
	56	1.5			
	62	4.8			
IC05	72	4.8			
	1	4.8			
	6	1.4			
	38	1.0			
	39	1.4			
	41	4.8			
	56	1.2			
	62	4.8			
	72	4.8			

Pin No.	(B) Base	(C) Collector	(E) Emitter
Ref.No.			
Q01	0.8	0	1.5
Q02/03	1.6	0	2.2
Q04	0.3	0	0.9
Q05/06	1.1	0	1.9

B1 BOARD (2/3) \* MARK

Model Ref. No.	28WS3A	28WS3B	28WS3D	28WS3E	28WS3K	28WS3U
C527	—	0.222MF	—	—	—	—
R24	1.5K	1K	1.5K	1.5K	1.5K	1.5K
R25	1.5K	1K	1.5K	1.5K	1.5K	1.5K
R37	150	100	150	150	150	150
R38	150	100	150	150	150	150
R56	—	10K	—	—	—	—
R57	10K	—	10K	10K	10K	10K

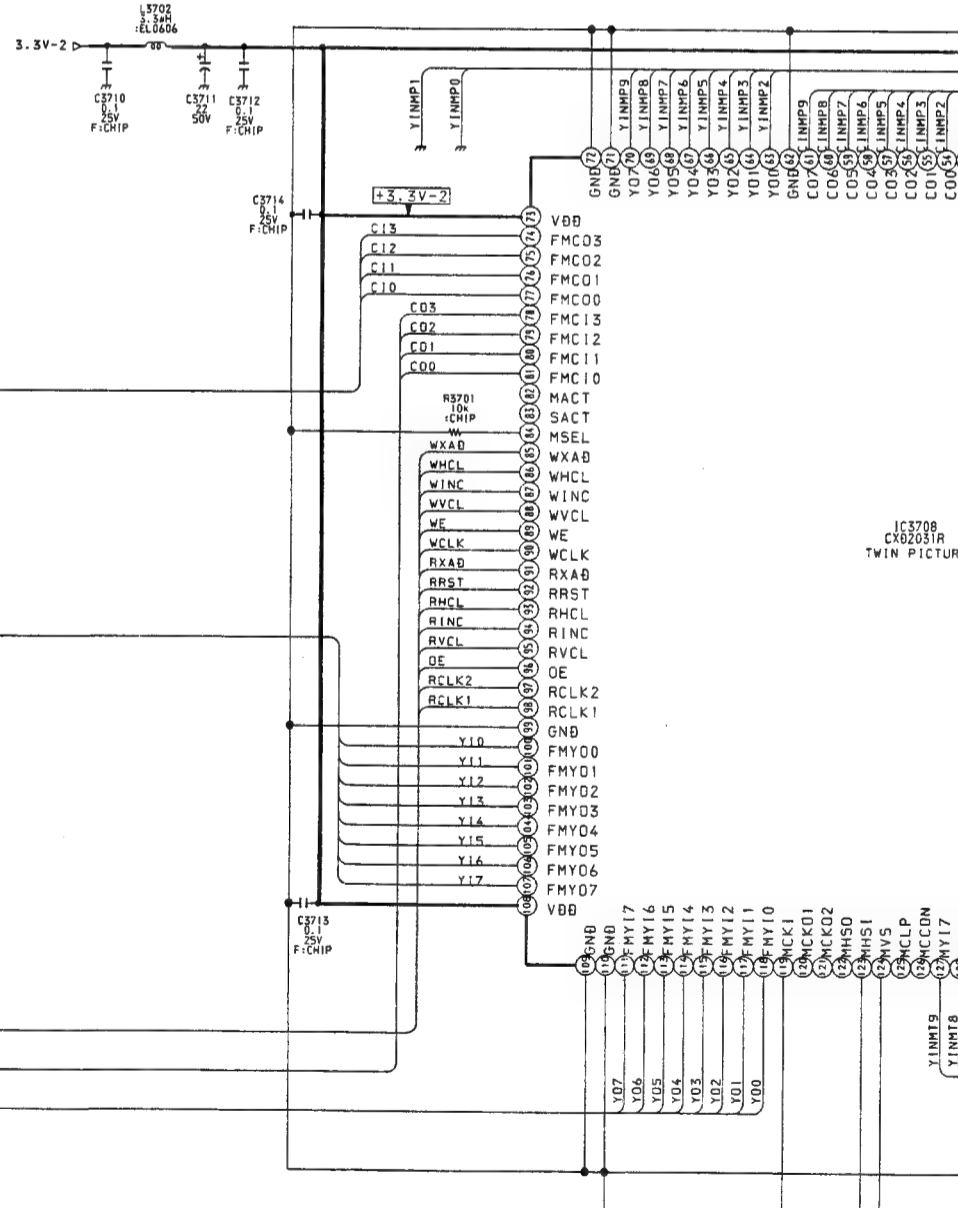
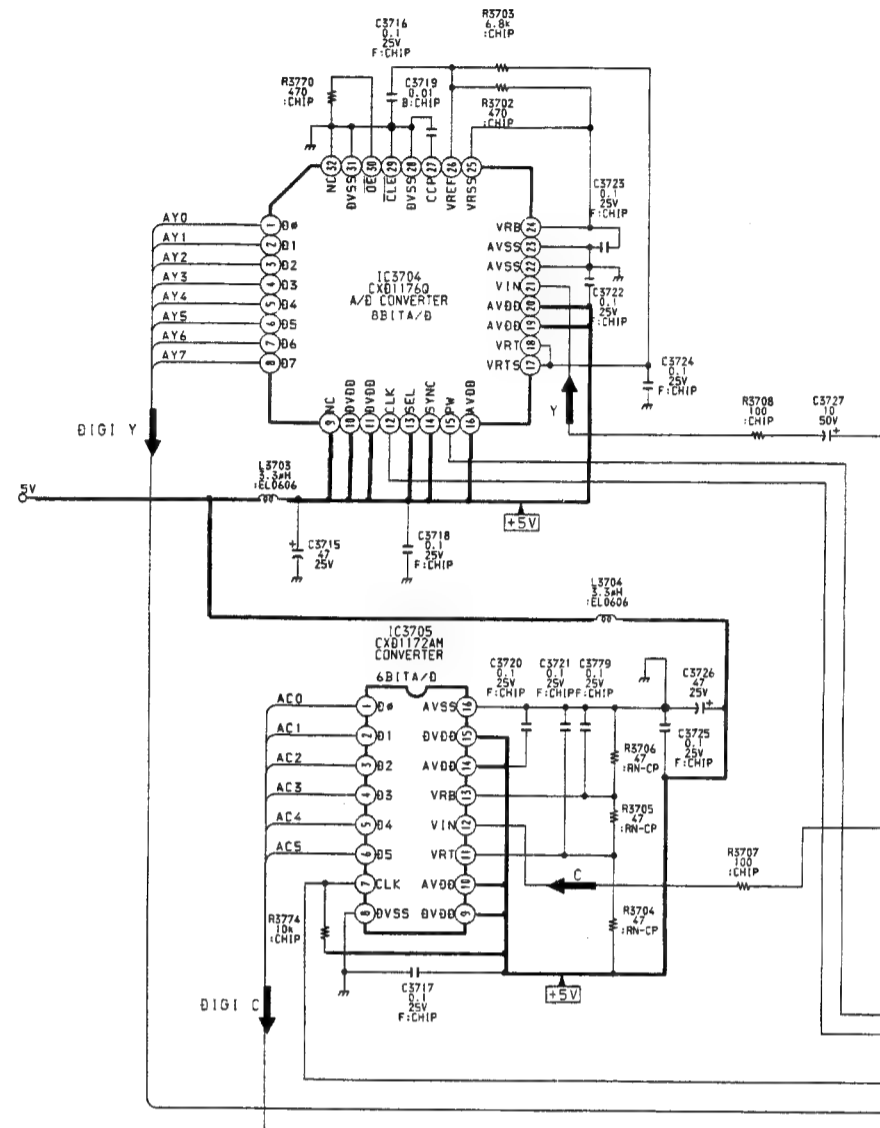
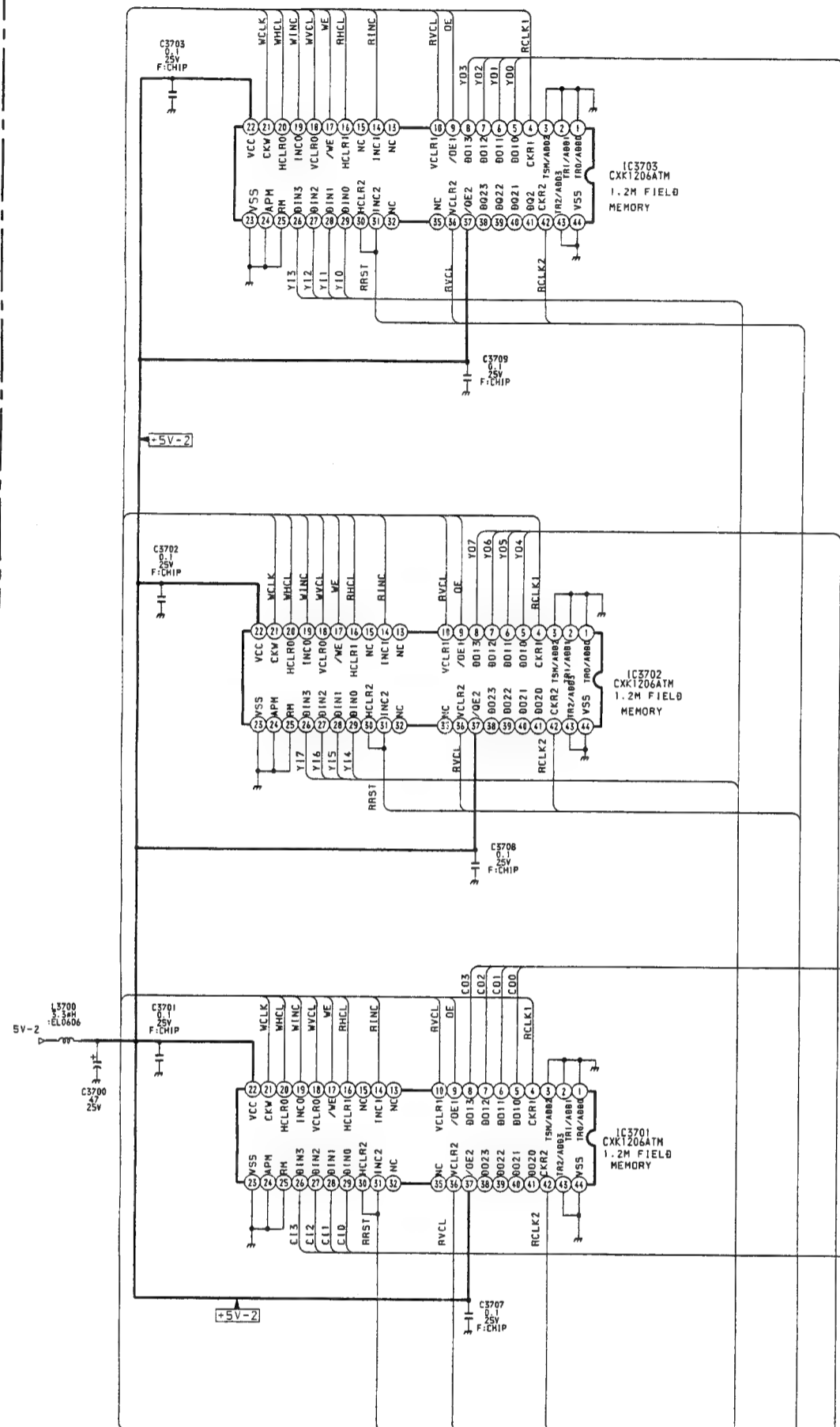
B1 BOARD (3/3) \* MARK

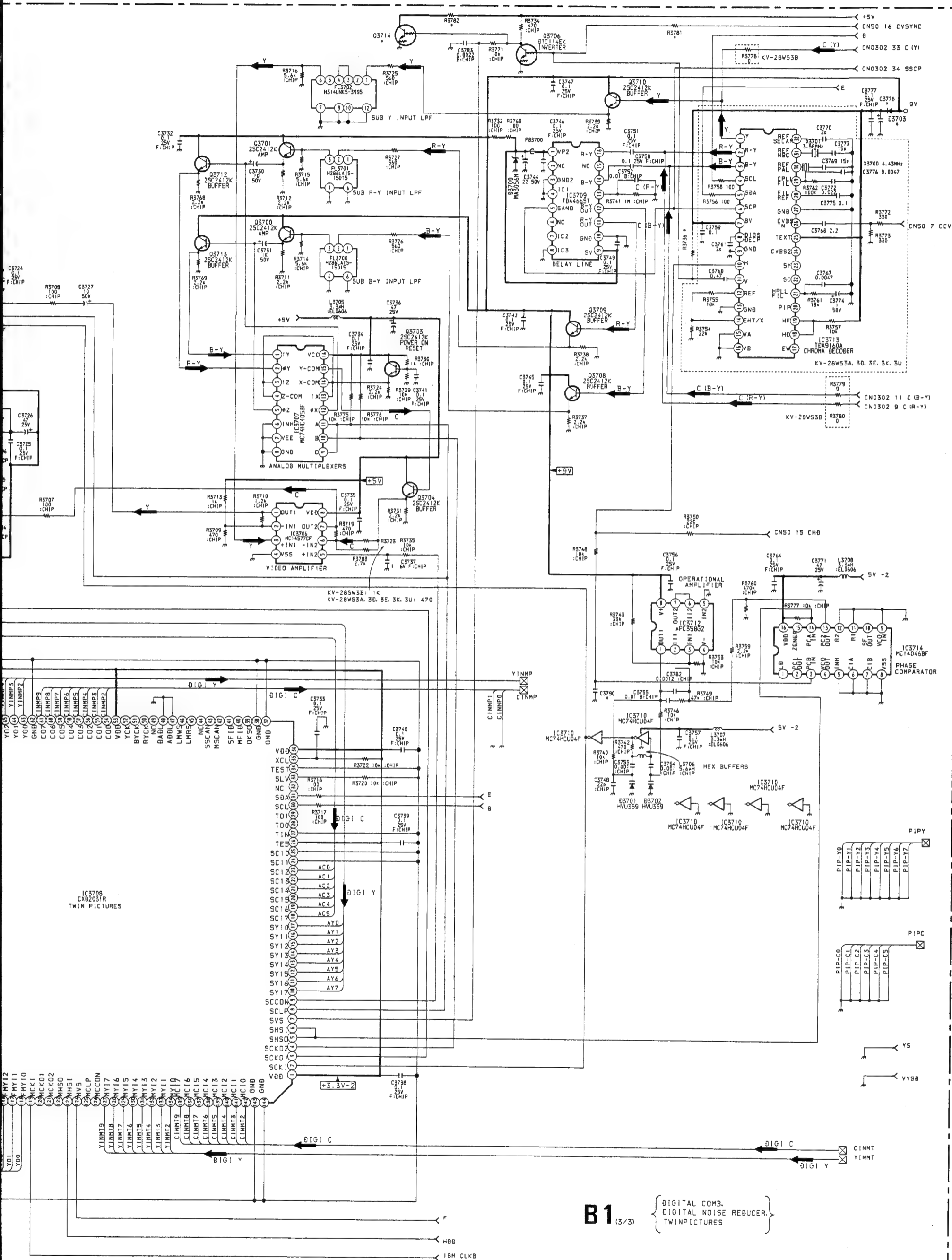
Model Ref. No.	28WS3A	28WS3B	28WS3D	28WS3E	28WS3K	28WS3U
C3778	47MF	-	47MF	47MF	47MF	47MF
C3790	100P	220P	100P	100P	100P	100P
D3703	RB411D	-	RB411D	RB411D	RB411D	RB411D
Q3714	DTC114EKA	-	DTC114EKA	DTC114EKA	DTC114EKA	DTC114EKA
R3736	47K	-	47K	47K	47K	47K
R3781	220	-	220	220	220	220
R3782	4.7K	-	4.7K	4.7K	4.7K	4.7K

Ref.No.	Pin No.	Voltage (V)	Ref.No.	Pin No.	Voltage (V)
IC3704	9-11	4.8	IC3713	1	2.4
	12	2.2		2	2.1
	13-14	4.8		3	2.0
	15	3.6		4-5	4.2
	16	4.8		6	1.3
	17-18	2.5		7	8.5
	19-20	4.8		8	5.0
	21	0.9		10	4.6
	24-26	0.5		11-12	3.8
IC3705	27	2.3		14	2.0
	7	1.5		18-19	3.8
	9-10	4.8		21	3.9
	11	3.1		25	8.5
	12	2.4		26	3.6
IC3706	13	1.7		28	3.4
	14-15	4.8		29	4.7
	1	2.0	IC3714	30	2.0
	2-3	1.6		31	1.5
IC3707	5-7	2.4		3	0.3
	8	4.8		13-14	2.1
	1-2	3.1	IC3708	16	4.8
	3-5	3.8		1	3.1
	9	3.6		2	2.2
	10	1.5		3-4	1.5
	11	3.6		5-6	2.0
	12	3.7		7	0.4
	13-14	3.8		8	3.6
	15	3.0		9	2.4
	16	4.8		26	3.1
IC3708	1	3.1		30	4.2
	2	2.2		31	4.2
	3-4	1.5		35-36	3.1
	5-6	2.0		53	3.1
	7	0.4		73	3.1
	8	3.6		108	3.1
	9	2.4		119	1.4
	26	3.1		123	1.6
	30	4.2		124	0.1
	31	4.2	IC3709	1	5.7
	35-36	3.1		5	1.3
	53	3.1		9	5.7
	73	3.1		11-12	3.0
	108	3.1		14	1.4
IC3709	119	1.4	IC3712	1	4.2
	123	1.6		2-3	2.0
	124	0.1		8	8.8
	1	5.7			

Pin No.	(B) Base	(C) Collector	(E) Emitter
Ref.No.			
Q3700	0	8.8	1.6
Q3701	2.2	8.8	1.6
Q3703	4.4	4.8	3.8
Q3704	3.1	4.8	2.5
Q3706	2.0	0.4	0
Q3708	0	8.8	2.4
Q3709	3.0	8.8	2.4
Q3710	2.4	8.8	1.8
Q3712/3713	3.7	8.8	3.0

B-#SSAE3 <...> -BI.-26WS3

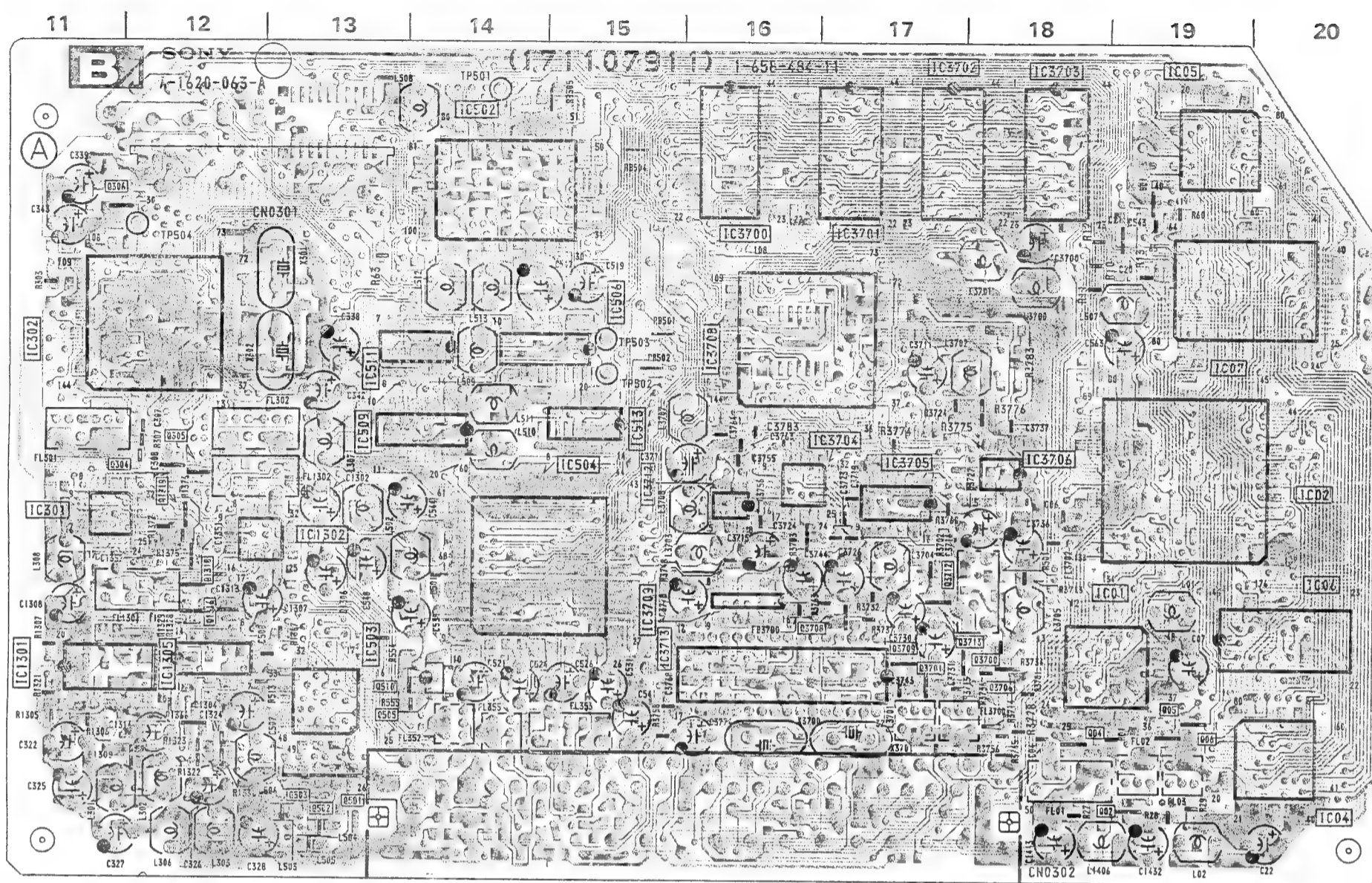




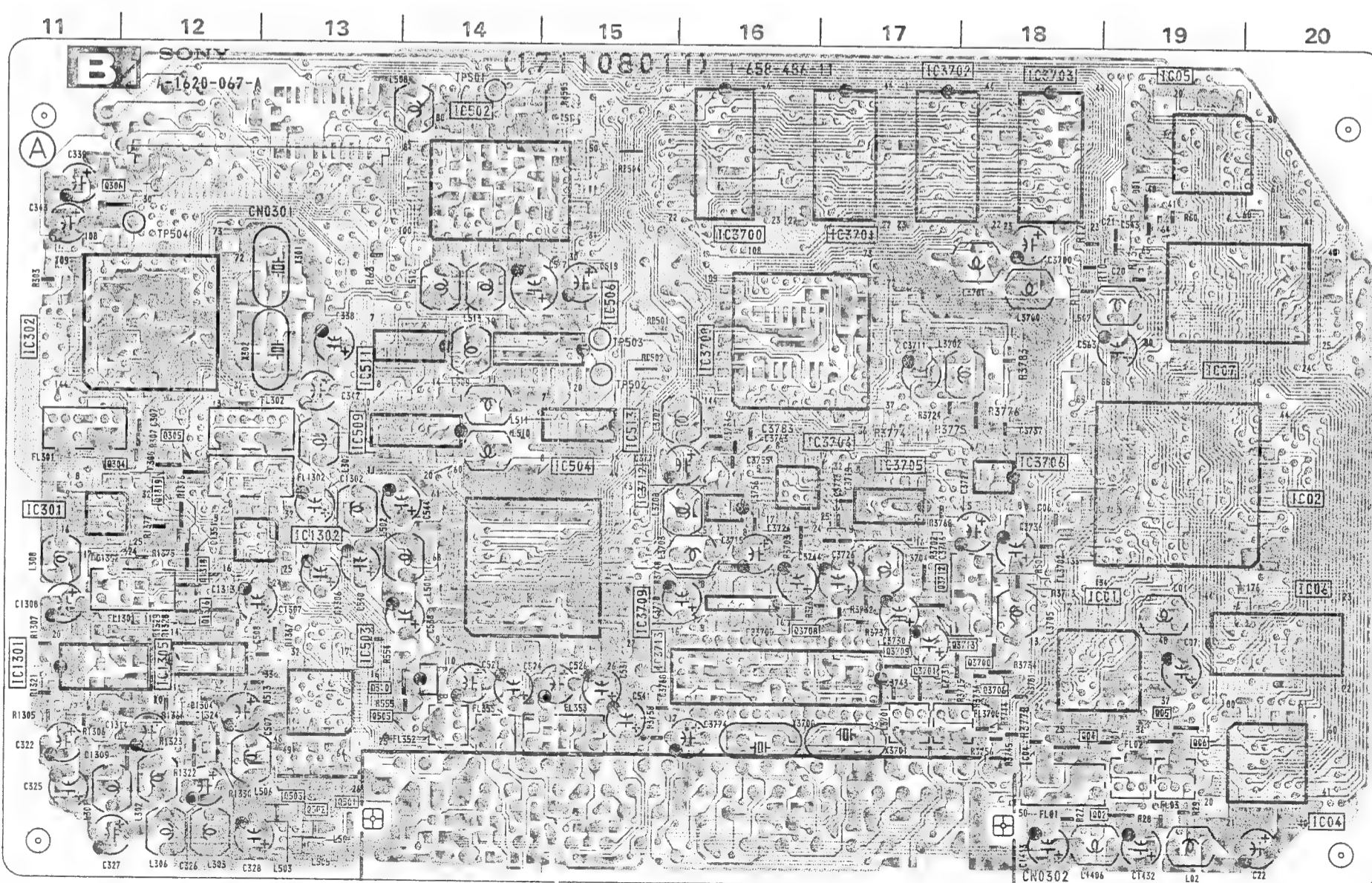
DIGITAL COMB, DIGITAL NOISE REDUCER,  
TWIN PICTURES

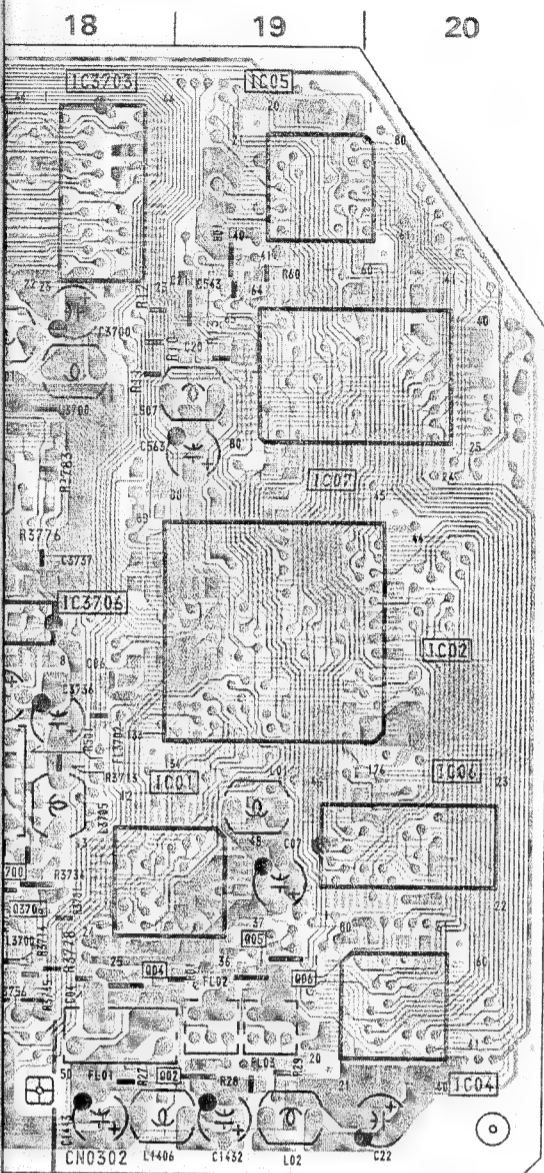
[ CHROMA DECODER, ]  
[ SYNC SEPARATOR ][illegible]

— B1 Board — <Component Side> (KV-28WS3A, 3D, 3E, 3K, 3U ONLY)



— B1 Board — <Component Side> (KV-28WS3B ONLY)

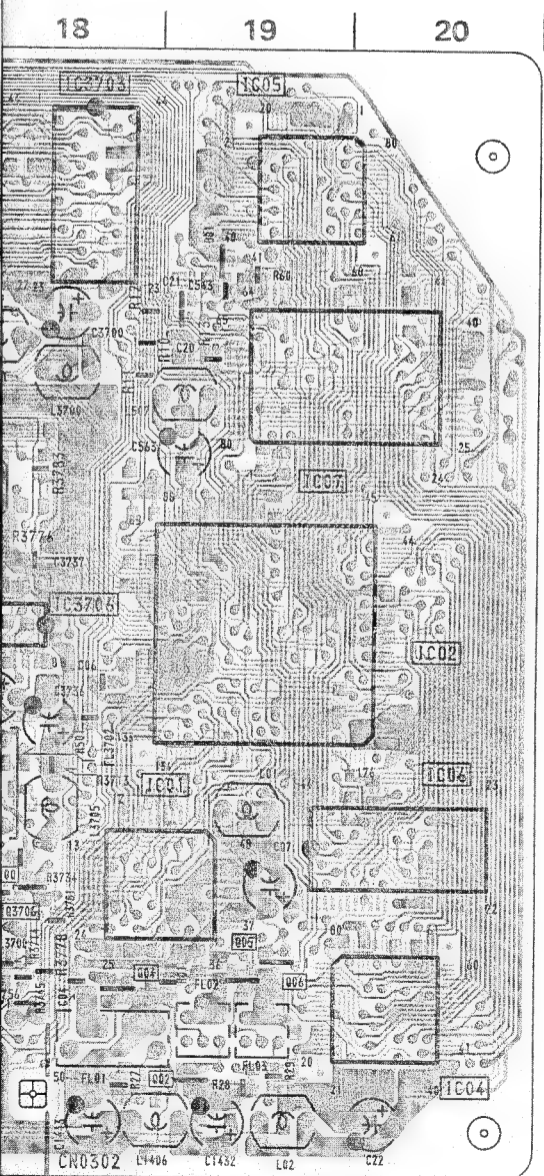




# B1 BOARD

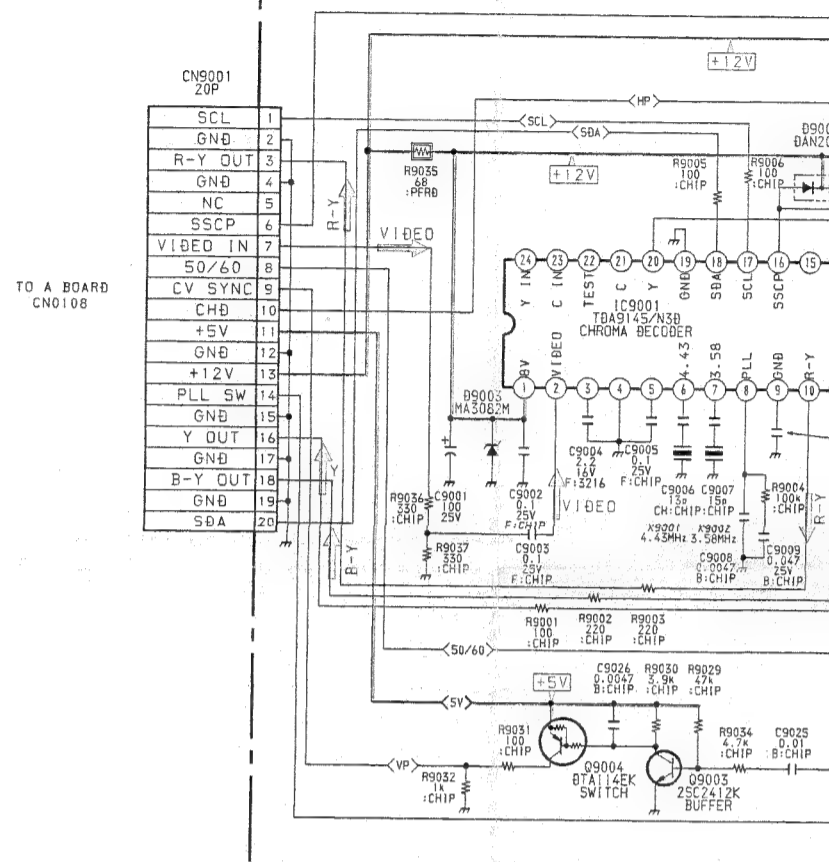
IC			
IC01	D-19	● Q354	E-8
IC02	D-20	● Q356	E-7
IC04	F-20	● Q358	E-6
IC05	A-19	Q359	D-7
IC06	D-20	Q360	D-6
IC07	C-19	Q501	F-13
IC301	D-11	Q502	F-13
IC302	C-11	Q503	F-13
IC501	C-2	● Q505	E-8
IC502	A-14	Q506	A-6
IC503	E-13	Q507	F-7
IC504	D-15	Q508	F-7
IC505	A-9	Q509	F-8
IC506	B-15	● Q510	E-13
IC507	B-2	Q1301	E-9
○ IC509	C-13	Q1302	E-10
○ IC510	C-7	Q1303	E-9
○ IC511	C-13	Q1304	E-10
○ IC512	C-6	Q1305	E-10
○ IC513	C-15	Q1306	E-10
IC1301	E-11	Q1307	E-9
IC1302	D-13	Q1316	E-12
IC1305	E-12	Q1317	D-9
IC3701	B-17	Q1318	D-12
IC3702	A-17	Q1319	D-12
IC3703	A-18	Q3700	E-18
IC3704	C-17	Q3701	E-17
IC3705	C-17	Q3703	C-3
IC3706	C-18	Q3704	B-4
IC3707	C-4	Q3706	E-18
IC3708	C-16	Q3708	E-16
IC3709	E-15	Q3709	E-17
IC3710	B-5	Q3710	E-3
IC3712	D-15	Q3712	D-17
○ IC3713	E-4	Q3713	E-18
IC3714	C-5		
TRANSISTOR		DIODE	
Q01	F-3	D01	A-19
Q02	F-19	D301	C-8
Q03	F-2	D302	B-8
Q04	E-18	D303	D-10
Q05	E-19	D1301	F-10
Q06	E-19	D1302	F-9
Q301	C-10	D1304	E-12
Q302	B-10	D1309	F-11
Q303	B-9	D3700	D-4
Q304	D-12	D3701	B-6
Q305	C-12	D3702	B-6
Q306	B-11	D3703	E-6
Q307	B-9		
Q308	C-8		
Q309	C-9		
● Q351	F-6		
● Q352	E-6		
● Q353	F-6		

○ mark : KV-28WS3A,3D,3E,3K and 3U only  
 ● mark : KV-28WS3B only

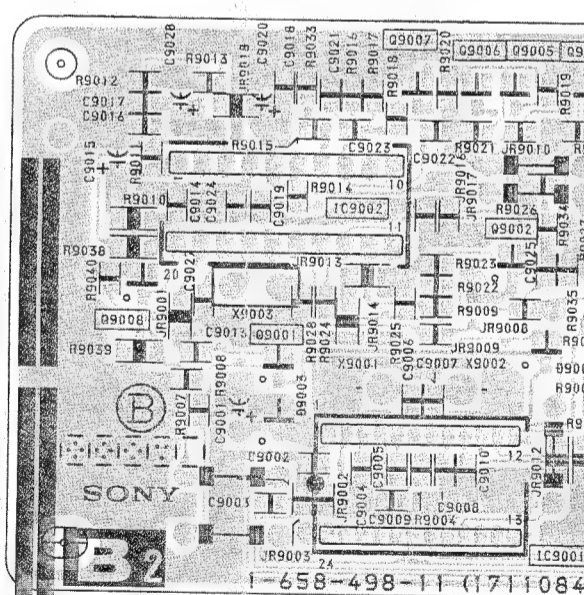


# (KV-28WS3B ONLY)

B-#SSAE3.<...>-B2.-28WS3



# — B2 Board — (KV-28WS3B ONLY)



B-#SSAE3.<...>-B2.-28WS3

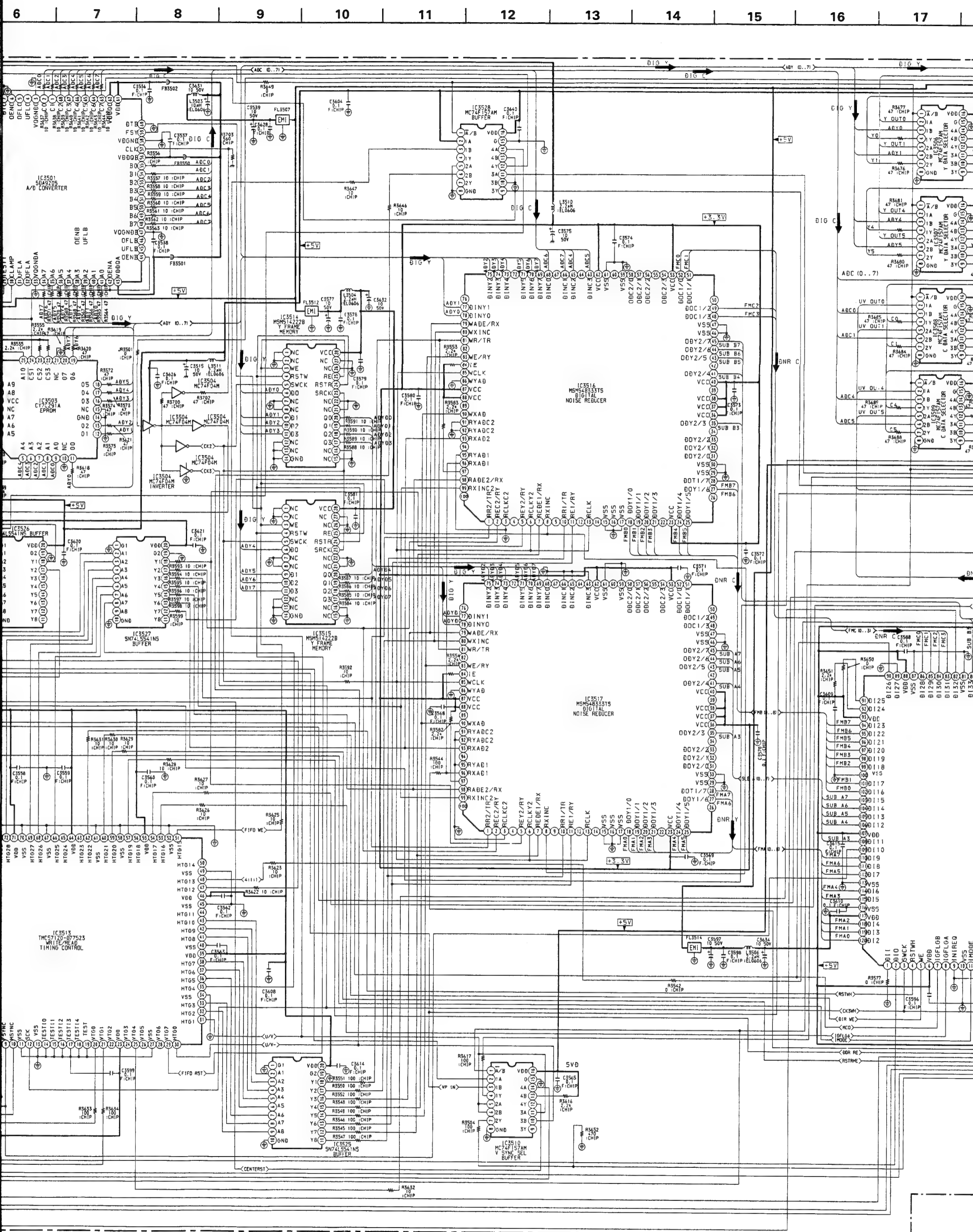


Ref.No.	Pin No.	Voltage (V)	Ref.No.	Pin No.	Voltage (V)	Ref.No.	Pin No.	Voltage (V)
IC3501	6	0.1	IC3508	13	0.4		72	4.8
	9	0.1		14	0.3		73	1.3
	10	2.4		16	4.8		75	1.1
	11	4.8		1	4.8		88	4.8
	12	4.8		2-7	1.2		91-93	4.8
	14	0.5		9	1.2		107	4.8
	15	2.8		10	1.5		117	4.8
	16	2.4		11	0.9	IC3512	2	2.4
	18	4.7		12	1.3		4	2.4
	21	2.6		13	1.6		5	4.8
	22	2.4		14	1.3		8-9	4.0
	23	4.7		16	4.8		11	4.8
	25	2.2	IC3509	1	4.8		13	4.8
	26	0.5		2	0.9		14	1.5
	30	0.1		3	1.5		16	4.8
	42	4.4		4	1.2		17	0.1
	43	4.8		5	1.3		20	4.8
	56	4.8		6	1.6		21	2.5
	57	1.4		7	1.3		35	4.8
	59	4.2		9	1.2		44	4.8
	61	4.8		10	1.5	IC3513	1	4.8
	62	4.8		11	0.9		3	4.8
	26	0.5		12	2.4		8	4.8
	27-29	-		13	3.0		9	2.3
	61	6.3		14	1.6		10	2.3
	62	4.2		16	4.8		12	1.7
IC3503	22	4.8	IC3510	1	4.8		21	4.8
	23	4.3		4	0.1		23	4.8
	24	4.3		5-6	2.3		30	2.3
	28	4.8		7	1.5		31	2.3
IC3506	1	4.8		9	1.6		36	3.9
	2	1.2		10-11	2.3		37	3.8
	3	2.1		12	4.3		39	4.8
	4	1.6		13	4.8	46	4.8	
	5	1.2		14	4.2	48	1.2	
	6	2.2		16	4.8	50	4.6	
	7	1.6	IC3511	3	1.6	51	4.2	
	9	1.6		5	1.8	55	4.8	
	10	2.0		6	4.8	57	4.2	
	11	1.1		11	4.8	59	1.0	
	12	1.6		13	4.8	60	1.8	
IC3507	13	2.0		15	4.8	64	4.8	
	14	1.1		17	2.4	71	4.8	
	16	4.8		19	4.8	77	4.8	
	1	4.8		22	4.8	79	4.8	
	2	1.3		25	4.2	80	1.3	
	3	2.4		26	1.8	89	4.8	
	4	2.0		27	1.6	98	4.8	
	5	1.2		28	4.8	99	4.8	
	6	2.0		29-30	1.2			
	7	1.7		34	4.8			
	9	1.4		44	4.8			
	10	1.5		58	4.8			
	11	0.9		63	4.8			
	12	0.5		71	4.8	All Voltages are indicated in Volts DC		

Ref.No.	Pin No.	Voltage (V)
IC3514	3	4.2
IC3515	5	1.6
	23	1.6
	25	4.2
	28	4.8
IC3516	6	1.6
IC3517	7-8	0.1
	10	0.1
	11	3.0
	13	1.6
	23	3.2
	36-38	3.2
	40	3.2
	53	3.2
	62	3.2
	79-81	0.1
	83-84	3.0
	85	1.6
	87-88	3.2
	90	0.1
	93	0.1
	98-99	0.1
IC3520	1	1.8
	2	0.1
	3	4.8
	8	4.8
	15	4.8
	17	4.8
	23	4.8
	34	1.4
	35	4.8
	38-39	2.4
IC3521	43	1.8
	1	0.5
	2-3	4.8
	8	1.2
	9-10	4.0
IC3525	11	1.5
	14	4.8
	6-7	2.8
	11-12	0.1
	13-14	3.0
IC3527	15-18	0.1
	20	4.8
	9	1.7
	12-18	0.1
IC3528	20	4.8
	1-2	4.8
	3	2.3
	6	2.3
	9	0.1
	12	0.1
	14	4.1
	16	4.8

Pin No.	(B) Base	(C) Collector	(E) Emitter
Ref.No.			
Q3501	5.2	12.0	4.6
Q3502	2.5	0	3.1
Q3503	-	0	-
Q3504	5.2	12.0	4.6
Q3505	5.6	12.0	5.0
Q3506	2.5	0	3.1
Q3507	3.1	4.7	2.4
Q3510	0	0	0
Q3512	3.8	0	0
Q3513	2.5	0	3.1





**Q** {DIGITAL NOISE REDUCER.  
Y/C PROCESSOR}

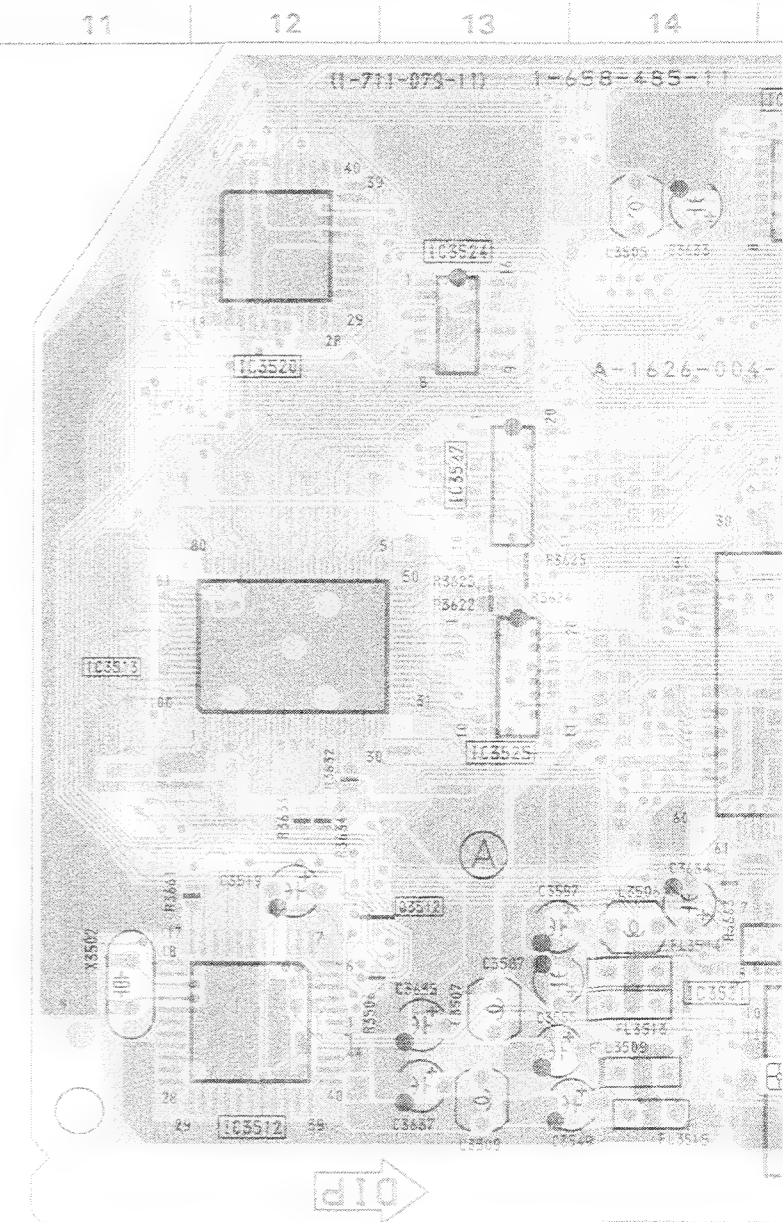
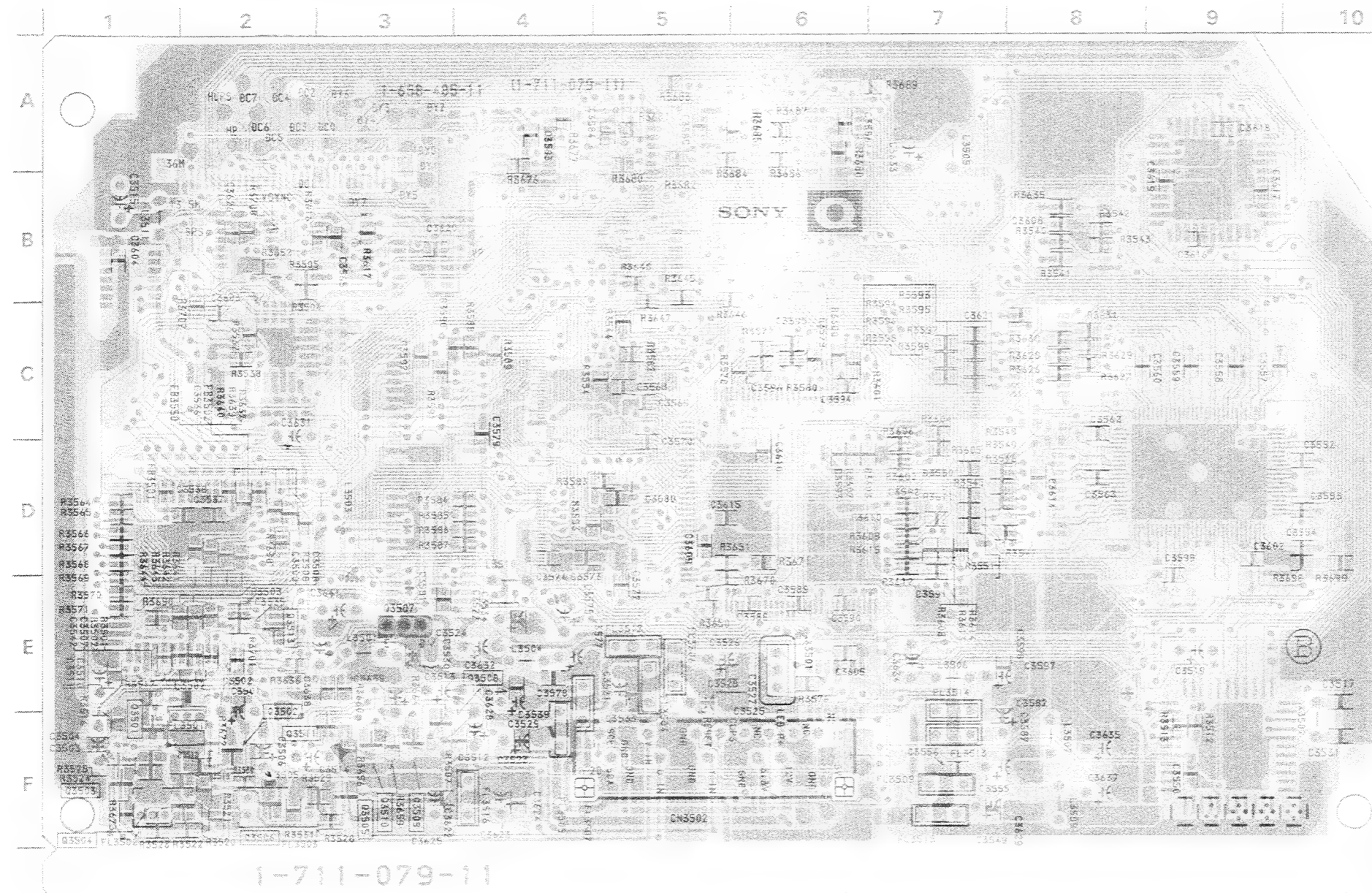
KV-28WS3

KV-28WS3

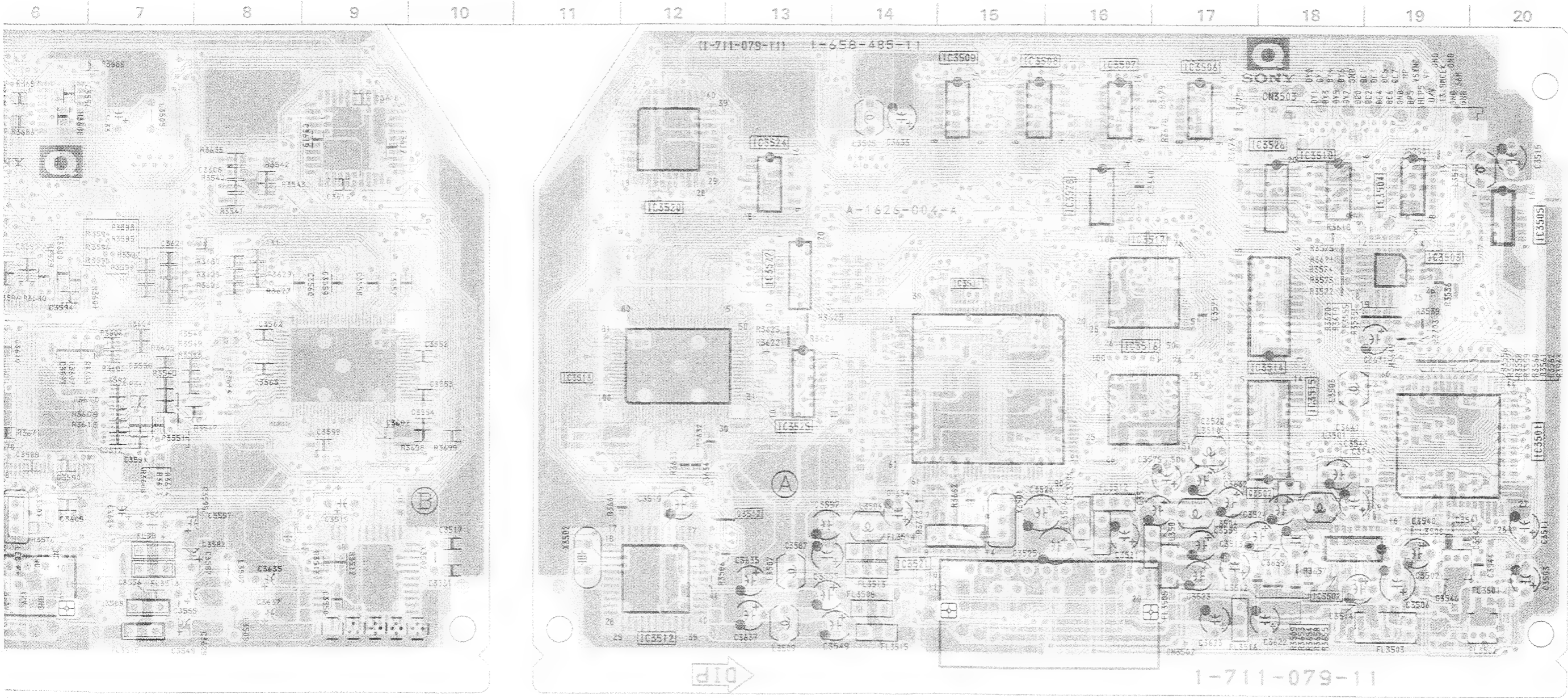
**Q** [ DIGITAL NOISE REDUCER,  
Y/C PROCESSOR ]

— Q Board — <Conductor Side> (KV-28WS3A, 3D, 3E, 3K, 3U ONLY)

— Q Board — <Component Side> (KV-28WS3A, 3D, 3E, 3K, 3U ONLY)



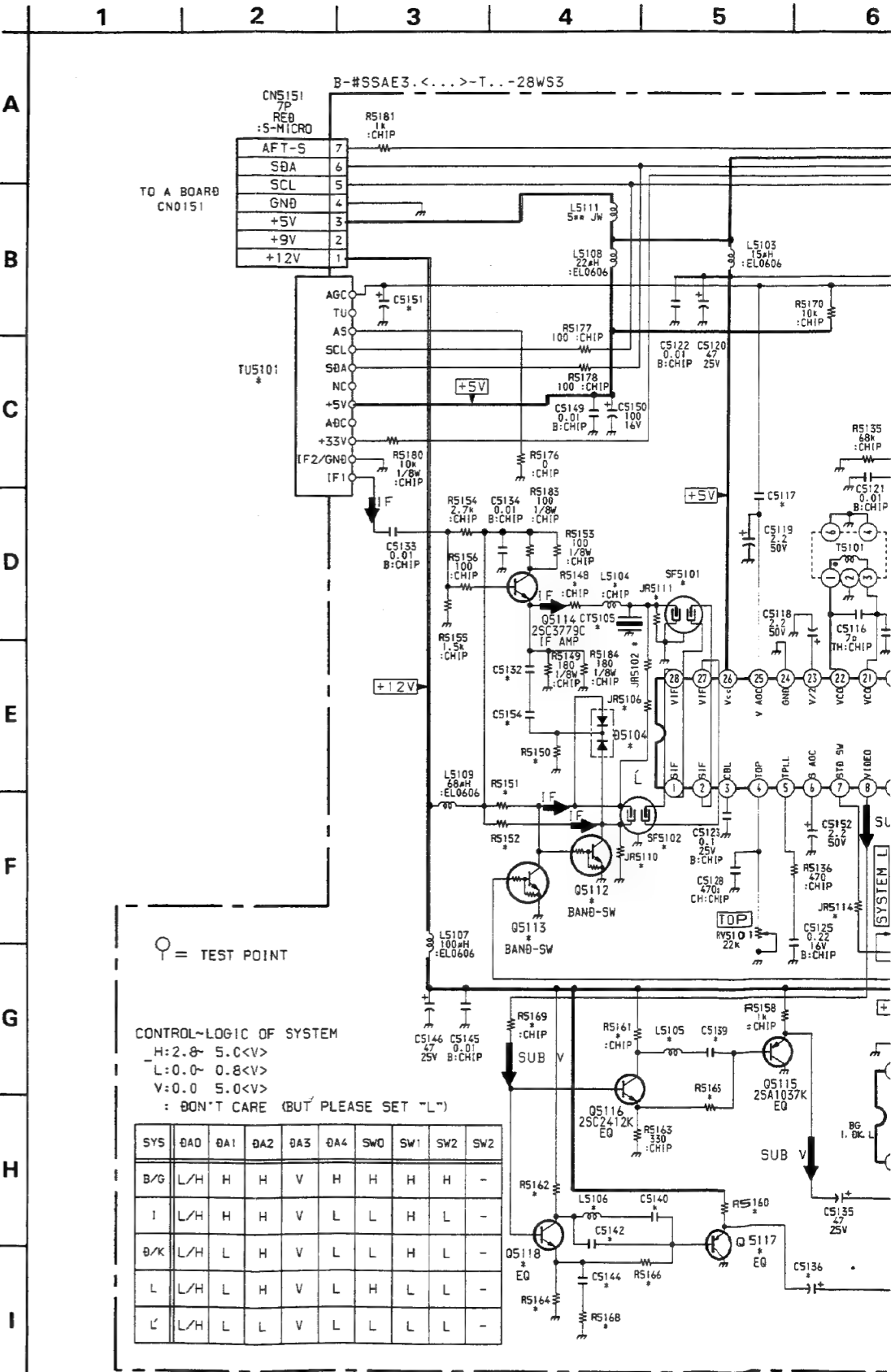
— Q Board — <Component Side> (KV-28WS3A, 3D, 3E, 3K, 3U ONLY)



Q BOARD	
IC	
IC3501	D-20
IC3503	C-19
IC3504	B-19
IC3506	A-17
IC3507	A-16
IC3508	A-15
IC3509	A-15
IC3510	B-18
IC3511	C-15
IC3512	F-12
IC3513	D-11
IC3514	D-18
IC3515	D-18
IC3516	D-16
IC3517	C-16
IC3520	B-12
IC3521	F-14
IC3525	D-13
IC3526	B-18
IC3527	C-13
IC3528	B-16
TRANSISTOR	
Q3501	E-1
Q3502	E-2
Q3503	F-1
Q3504	F-1
Q3505	F-3
Q3506	F-2
Q3507	E-3
Q3512	E-13
Q3513	E-2

T BOARD \* MARK

Model	28WS3A	28WS3B	28WS3D	28WS3E	28WS3K	28WS3U
Ref. No.						
C5111	-	0.01MF	-	-	-	-
C5112	0.01MF	0.01MF	0.01MF	0.01MF	0.01MF	0:CHIP
C5113	-	0.01MF	-	-	-	-
C5117	-	1MF	-	-	-	-
C5129	-	0.0039MF	-	-	-	-
C5132	-	0.01MF	-	-	-	-
C5136	-	47MF 25V	-	-	-	-
C5137	0.018MF	-	0.018MF	0.018MF	0.018MF	0.018MF
C5139	-	100P	-	-	-	-
C5140	-	EBP	-	-	-	-
C5142	-	33P	-	-	-	-
C5144	-	15P	-	-	-	-
C5151	10MF 50V	100MF 16V	10MF 50V	10MF 50V	10MF 50V	10MF 50V
C5154	-	0:CHIP	-	-	-	-
CF5101	5.5MHz	6.0MHz	5.5MHz	5.5MHz	5.5MHz	-
CF5102	-	FILTER	-	-	-	-
CF5103	-	5.5MHz	-	-	-	6.0MHz
CT5104	5.5MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz
CT5105	-	TRAP	-	-	-	-
D5102	DAN202K	DAN202K	DAN202K	DAN202K	DAN202K	-
D5103	-	DAN202K	-	-	-	-
D5104	-	DAN202K	-	-	-	-
IC5103	TDA9813T	TDA9814T	TDA9813T	TDA9813T	TDA9813T	TDA9813T
IC5104	-	NJM2233BM	-	-	-	-
JR5102	-	0:CHIP	-	-	-	-
JR5105	0:CHIP	-	0:CHIP	0:CHIP	0:CHIP	0:CHIP
JR5106	0:CHIP	-	0:CHIP	0:CHIP	0:CHIP	0:CHIP
JR5107	0:CHIP	-	0:CHIP	0:CHIP	0:CHIP	0:CHIP
JR5110	0:CHIP	-	0:CHIP	0:CHIP	0:CHIP	0:CHIP
JR5111	0:CHIP	-	0:CHIP	0:CHIP	0:CHIP	0:CHIP
JR5113	0:CHIP	-	0:CHIP	0:CHIP	0:CHIP	0:CHIP
JR5114	-	0:CHIP	-	-	-	-
JR5115	-	0:CHIP	-	-	-	-
L5102	8.2uH	6.8uH	8.2uH	8.2uH	8.2uH	6.8uH
L5104	JW	0.22uH	JW	JW	JW	JW
L5105	-	10uH	-	-	-	-
L5106	-	39uH	-	-	-	-
Q5104	DTC144EKA	DTC144EKA	DTC144EKA	DTC144EKA	DTC144EKA	-
Q5105	DTC144EKA	DTC144EKA	DTC144EKA	DTC144EKA	DTC144EKA	-
Q5106	-	DTC144EKA	-	-	-	-
Q5107	-	DTC144EKA	-	-	-	-
Q5110	-	2SC2412K	-	-	-	-
Q5111	-	DTC144EKA	-	-	-	-
Q5112	-	DTC144EKA	-	-	-	-
Q5113	-	DTC144EKA	-	-	-	-
Q5117	-	2SA1037K	-	-	-	-
Q5118	-	2SC2412K	-	-	-	-
Q5121	-	DTC144EKA	-	-	-	-
R5112	-	10K	-	-	-	-
R5115	-	10K	-	-	-	-
R5116	-	10K	-	-	-	-
R5117	-	1K	-	-	-	-
R5119	1K	1K	1K	1K	1K	-
R5123	2.2K	2.2K	2.2K	2.2K	2.2K	-
R5124	2.2K	2.2K	2.2K	2.2K	2.2K	-
R5125	-	2.2K	-	-	-	-
R5126	-	2.2K	-	-	-	-
R5127	560	560	560	560	560	-
R5128	560	560	560	560	560	-
R5129	2.2K	2.2K	2.2K	2.2K	2.2K	-
R5130	-	2.2K	-	-	-	-
R5131	0:CHIP	560	0:CHIP	0:CHIP	0:CHIP	560
R5132	150	120	150	150	150	150
R5140	-	5.6K	-	-	-	-
R5141	-	10K	-	-	-	-
R5148	0:CHIP	47	0:CHIP	0:CHIP	0:CHIP	0:CHIP
R5150	-	2.2K	-	-	-	-
R5151	-	2.2K	-	-	-	-
R5152	-	2.2K	-	-	-	-
R5160	-	1K	-	-	-	-
R5161	0:CHIP	330	0:CHIP	0:CHIP	0:CHIP	0:CHIP
R5162	-	330	-	-	-	-
R5164	-	330	-	-	-	-
R5165	100	560	100	100	100	100
R5166	-	1K	-	-	-	-
R5168	-	0:CHIP	-	-	-	-
R5169	1K	220	1K	1K	1K	1K
R5182	-	1K	-	-	-	-
RV5102	-	22K	-	-	-	-
SF5101	1-760-538-11	1-579-273-11	1-760-538-11	1-760-538-11	1-760-538-11	1-760-757-11
SF5102	-	1-760-244-11	-	-	-	-
TU5101	UV1316	UV1316	UV1316	UV1316	UV1316	UV1344



**1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13**

**A**

**B**

**C**

**D**

**E**

**F**

**G**

**H**

**I**

**TO A BOARD CN0151**

**TO A BOARD CN0152**

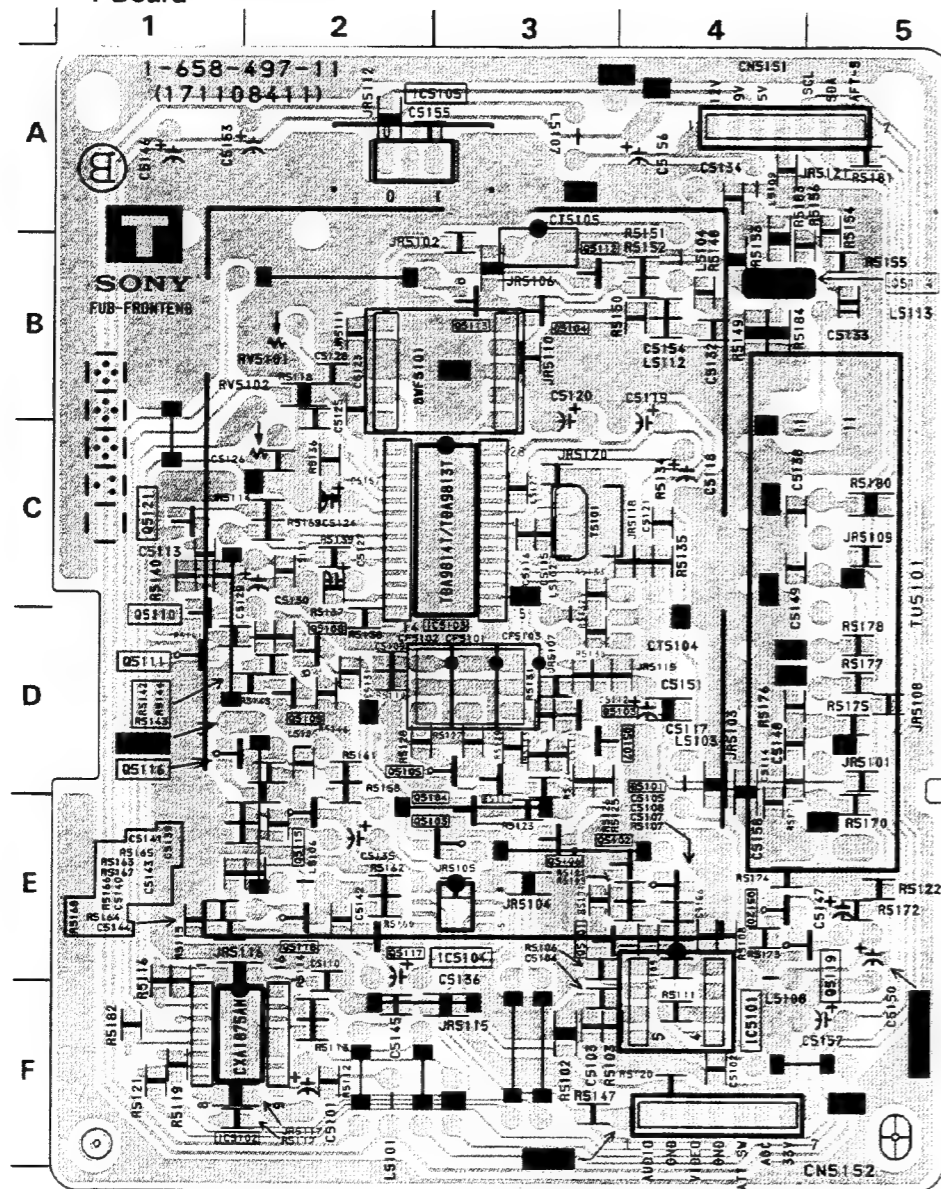
**CONTROL-LOGIC OF SYSTEM**

H: 2.8~ 5.0<V>  
L: 0.0~ 0.8<V>  
V: 0.0 5.0<V>  
: DON'T CARE (BUT PLEASE SET "L")

SYS	BA0	BA1	BA2	BA3	BA4	SW0	SW1	SW2	SW2
B/G	L/H	H	H	V	H	H	H	H	-
I	L/H	H	H	V	L	L	H	L	-
B/K	L/H	L	H	V	L	L	H	L	-
L	L/H	L	H	V	L	H	L	L	-
L	L/H	L	L	V	L	L	L	L	-

**T**  
[SIF/MIF]

— T Board —



KV-28WS3

KV-28WS3

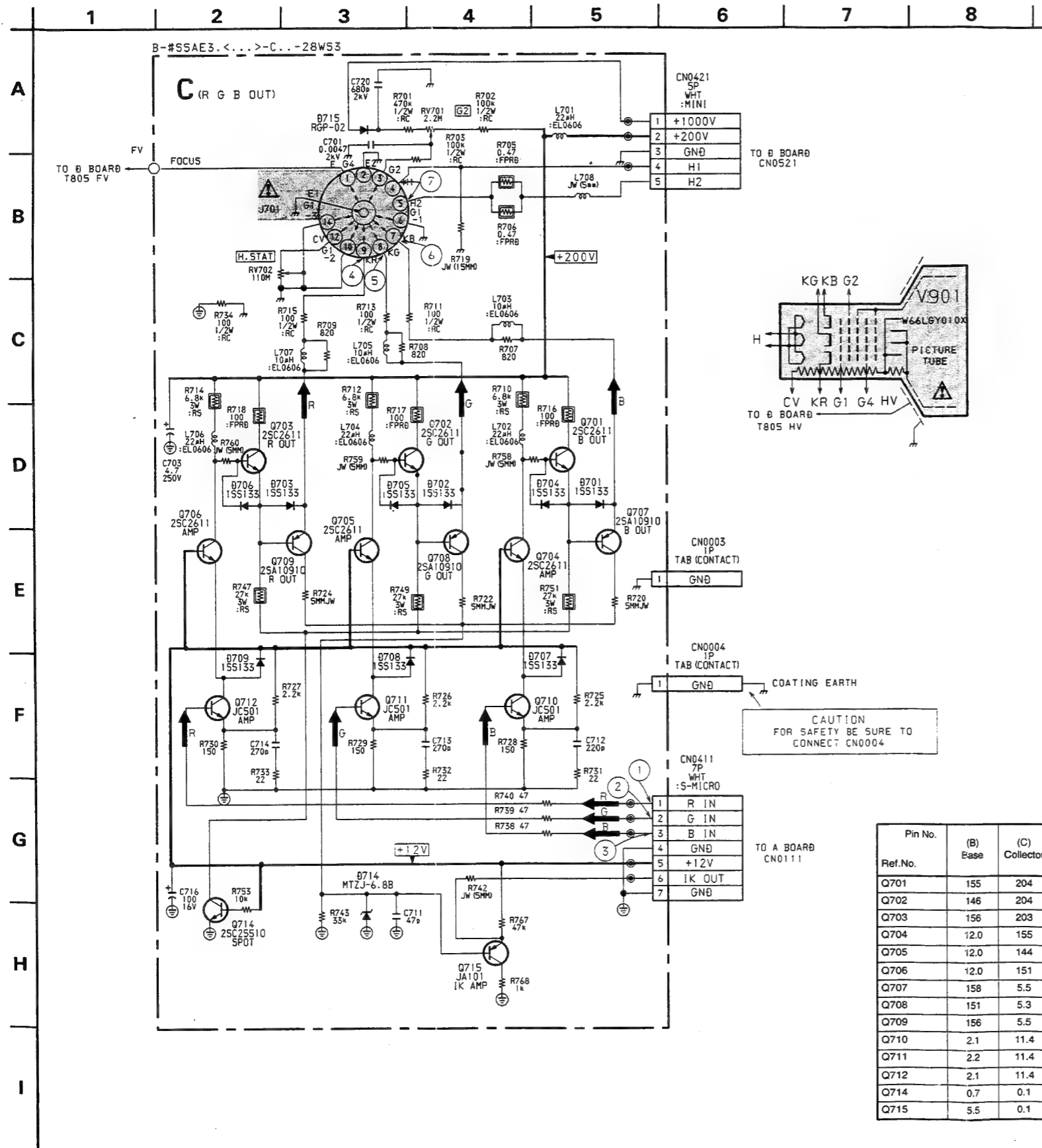
# T BOARD

IC	
IC5102	F-1
IC5103	D-3
● IC5104	E-3
TRANSISTOR	
○ Q5104	E-3
○ Q5105	D-2
● Q5106	E-3
● Q5107	D-4
Q5108	D-2
Q5109	D-2
● Q5110	D-1
● Q5111	D-1
● Q5112	B-3
● Q5113	B-3
Q5114	B-5
Q5115	E-2
Q5116	D-1
● Q5117	E-2
● Q5118	E-2
● Q5121	C-1
DIODE	
○ D5102	D-3
● D5103	D-4
● D5104	B-3
VARIABLE RESISTOR	
RV5101	B-2
● RV5102	B-2

- mark : KV-28WS3A,3B,3D,3E and 3K only
- mark : KV-28WS3B only

Ref.No.	Pin No.	Voltage (V)
IC5101	1	2.0
	3	0.6
	4	5.0
	6	2.3
	7	5.0
	8	2.0
	1-2	2.7
	3-7	4.6
IC5102	9	2.7
	14	5.0
	15	4.0
	16	5.0
	1-2	3.2
	4	1.0
	5	2.0
	6	2.8
IC5103	8	2.1
	10	2.6
	13	2.1
	14	1.7
	15	2.6
	16	0.9
	17	2.0
	18-19	1.8
	20	3.3
	21-22	2.7
	27-28	3.2

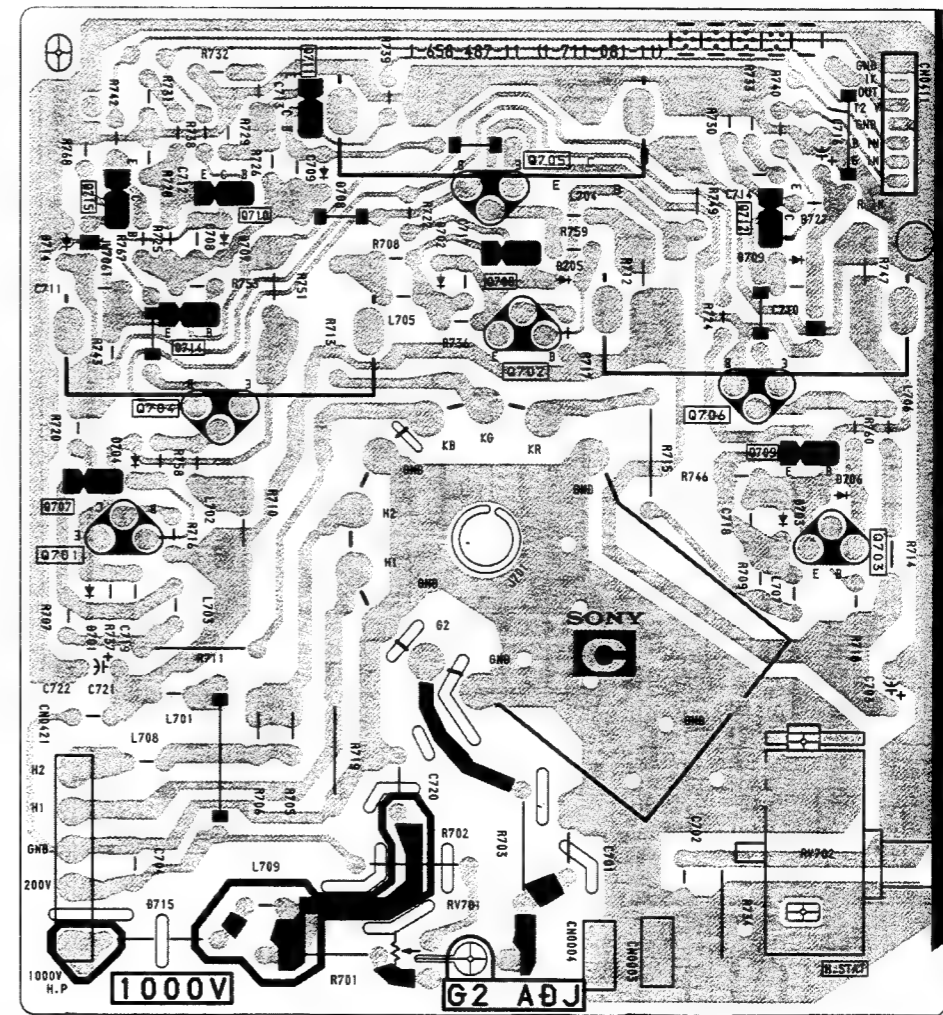
Ref.No.	Pin No.	(B) Base	(C) Collector	(E) Emitter
Q5101		4.3	4.8	5.0
Q5102		4.8	0	0
Q5103		0	2.7	0
Q5104		4.5	0	0
Q5105		0	6.2	0
Q5108		4.6	12.0	4.0
Q5109		0.6	4.6	0
Q5114		3.8	10.2	3.0
Q5115		1.5	2.1	2.0
Q5116		2.1	12.0	1.4



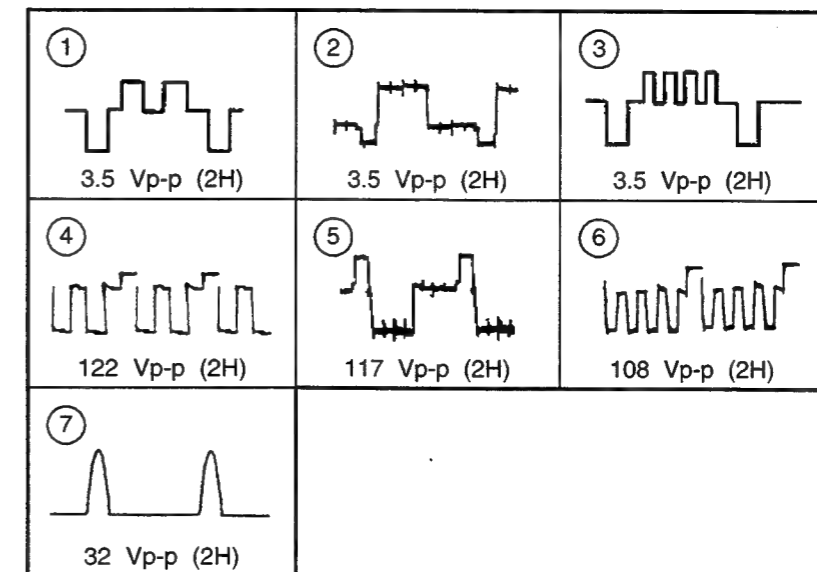
C

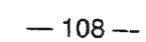
[RGB OUT]

— C Board —



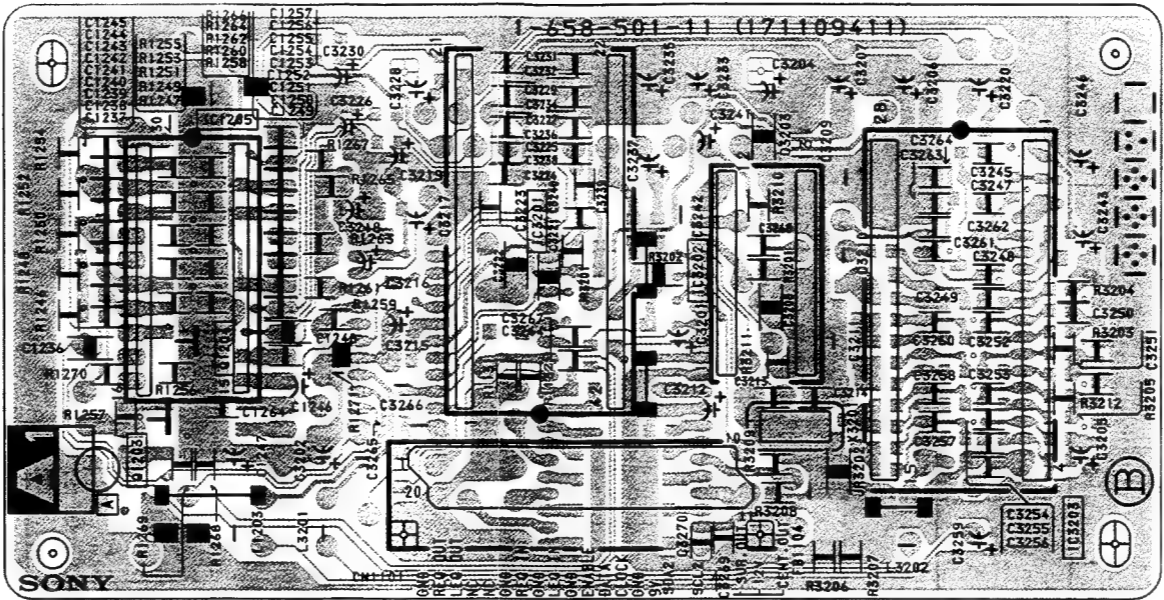
## WAVEFORMS C BOARD





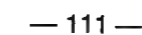
**A1** [DOLBY,EQ]

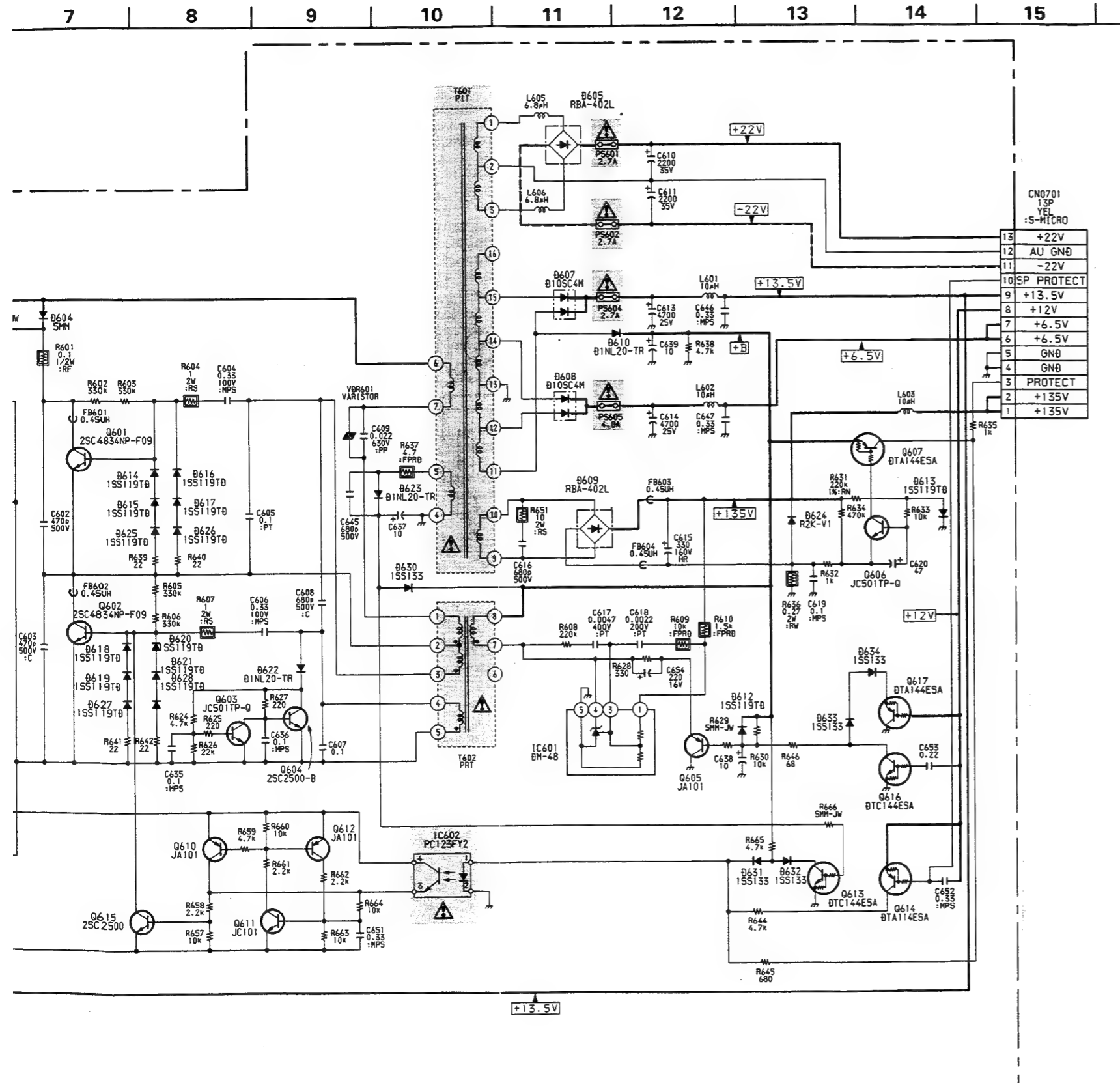
— A1 Board —



Ref.No.	Pin No.	Voltage (V)
IC3201	1-10	4.4
	12-15	4.4
	16	5.1
	17	4.4
	18	5.1
	19-21	4.4
	22-24	2.3
	25	5.2
	26	4.3
	27	5.0
	28-37	4.3
	38	8.6
	40	4.8
	41	4.0
IC3202	42	5.0
	2	5.0
	3	4.0
	4	5.0
	5	3.1
	6	0.7
	7	8.6
	8-16	4.3
	18-21	4.3
IC3203	22	4.7
	23-24	2.3
	1-3	6.0
	6-8	6.0
	11-14	6.0
	15-16	5.3
	17-18	6.0
	21	12.0
IC1205	22	4.0
	23	5.0
	1-12	4.4
	13	8.8
	14	4.4
	16	4.0
	17	5.0
	18	8.8
	19-30	4.4

Pin No.	(B) Base	(C) Collector	(E) Emitter
Ref.No.			
Q1203	8.8	4.0	4.0
Q1204	8.8	5.0	5.0



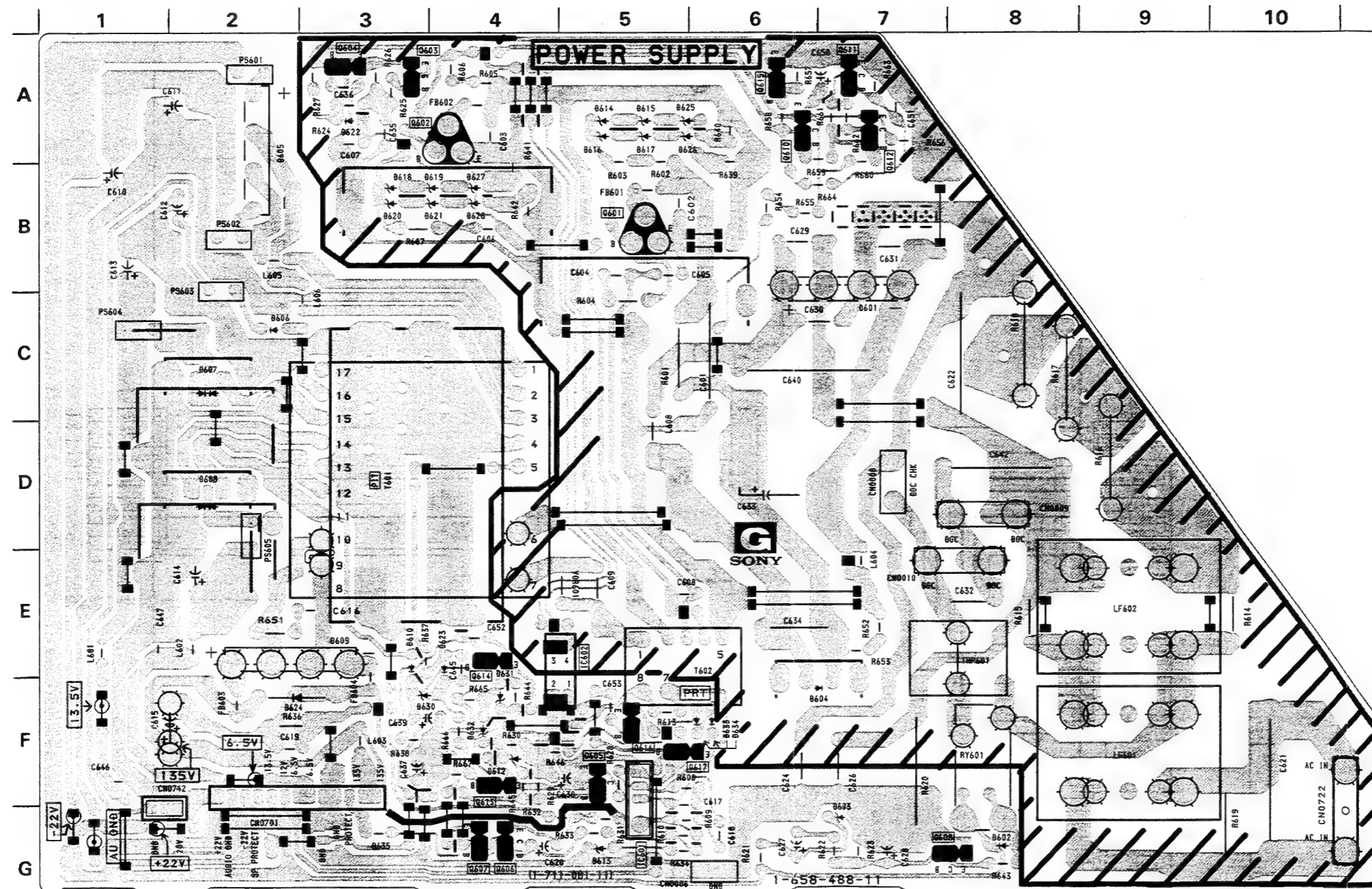


Pin No.	(B) Base	(C) Collector	(E) Emitter
Ref.No.			
Q601	-1.3	84.5	-0.1
Q602	-86	-0.1	-85
Q603	-84.5	-84.8	-85
Q604	-85.0	-84.3	-85
Q605	13.3	0	10.7
Q606	0.4	13.2	0.2
Q607	13.2	0	13.2
Q608	0	13.5	-0.1
Q610	5.6	1.8	28.0
Q611	-0.8	22.6	-84.0
Q613	9.2	-0.1	0
Q614	13.2	0.4	13.2
Q615	-85.2	-85.0	-84.0
Q616	-0.1	13.3	-0.1

**G**

[POWER SUPPLY]

— G Board —

**G BOARD**

IC	
IC601	G-5
IC602	E-5
TRANSISTOR	
Q601	B-5
Q602	A-3
Q603	A-3
Q604	A-3
Q605	F-5
Q606	G-4
Q607	G-4
Q608	G-7
Q610	A-6
Q611	A-7
Q612	A-7
Q613	F-4
Q614	E-4
Q615	A-6
Q616	F-5
Q617	F-6
DIODE	
D601	C-7
D602	G-8
D603	F-7
D605	A-2
D607	C-2
D608	D-2
D609	E-3
D610	E-3
D612	F-4
D613	G-5
D614	A-5
D615	A-5
D616	A-5
D617	A-5
D618	B-3
D619	B-4
D620	B-3
D621	B-4
D622	A-3
D623	E-4
D624	F-2
D625	A-5
D626	A-5
D627	B-4
D628	B-4
D630	F-3
D631	E-4
D633	F-6



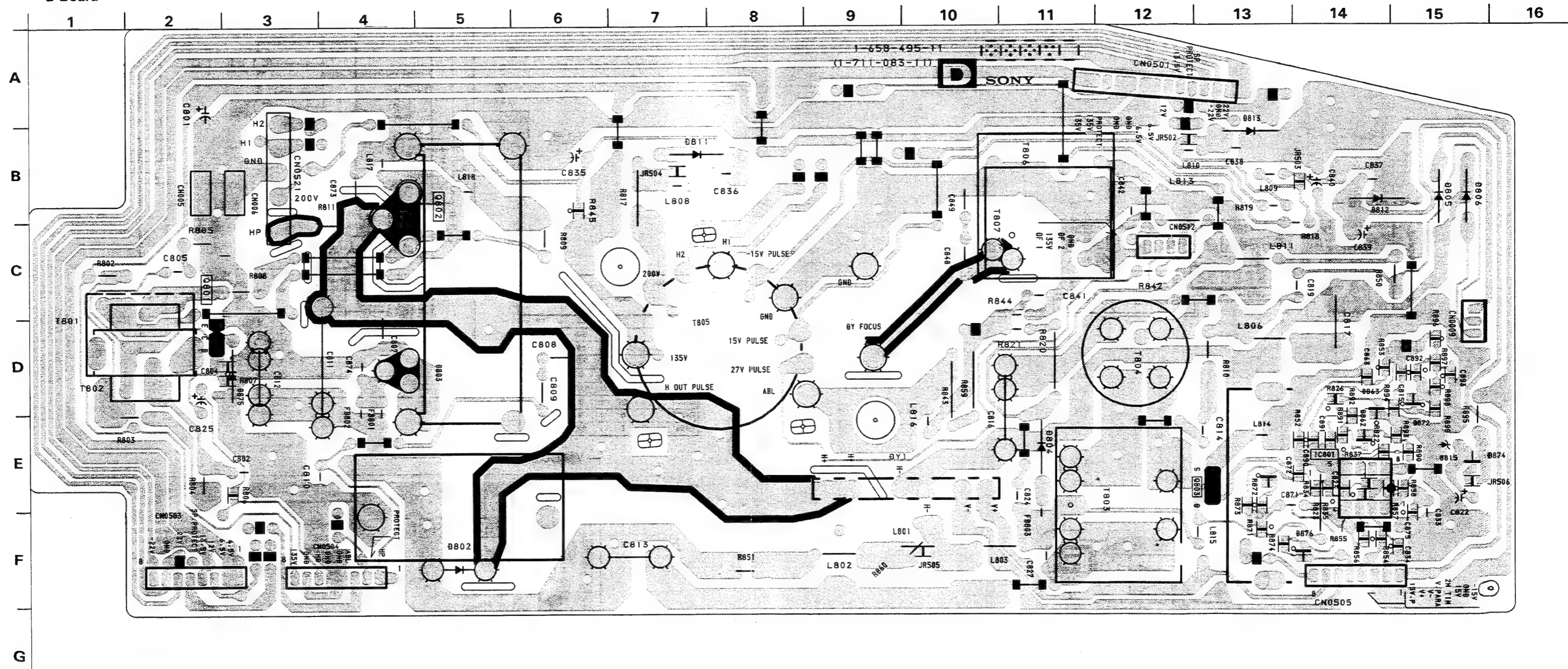
KV-28WS3

KV-28WS3

**D**

[H OUT, PIN CORRECT]

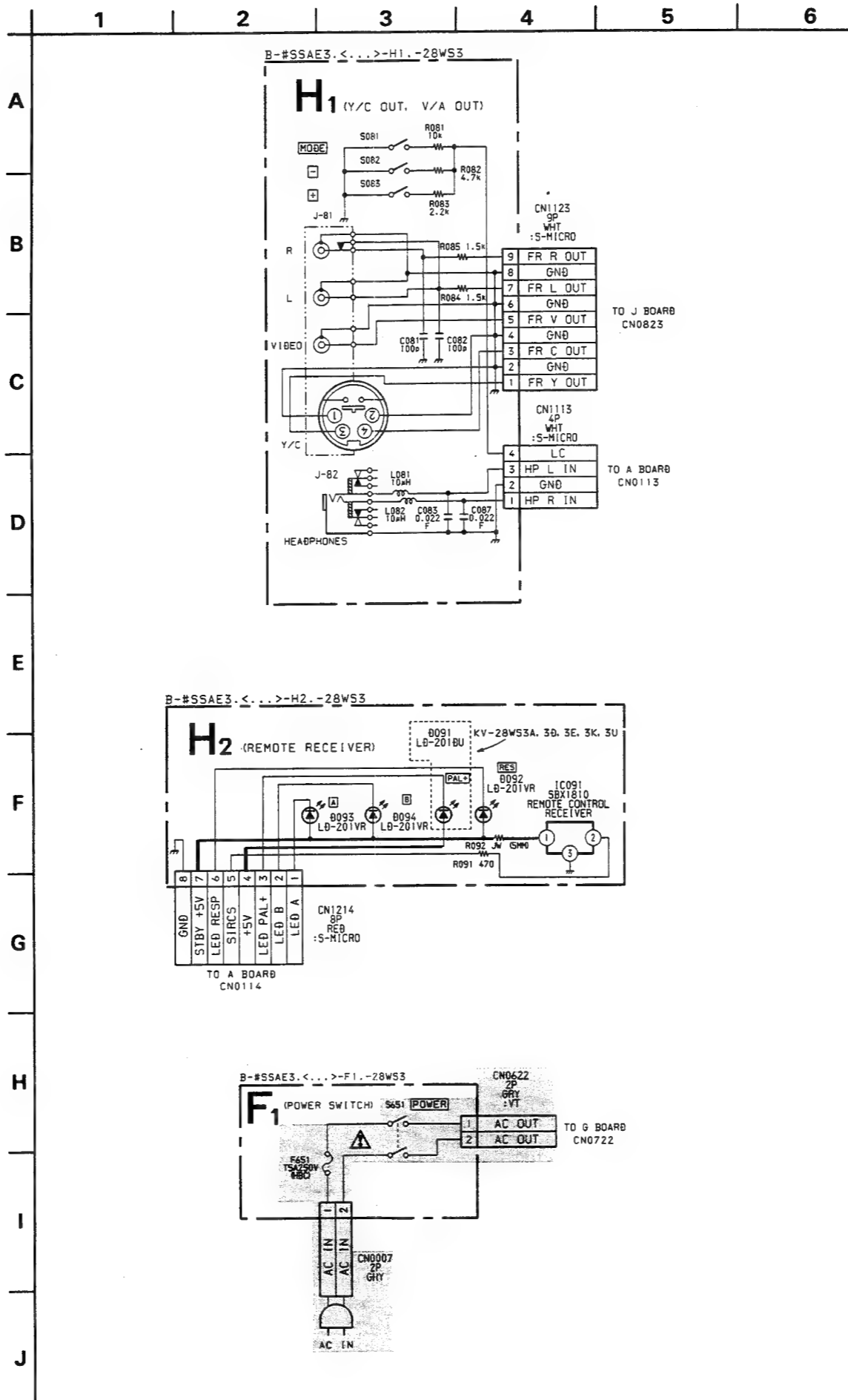
— D Board —

**NOTE:**

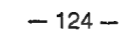
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

**D BOARD**

IC	
IC801	E-14
TRANSISTOR	
Q801	C-2
Q802	B-5
Q803	E-13
DIODE	
D802	F-5
D803	D-5
D804	E-11
D805	B-15
D806	B-15
D811	B-7
D812	B-14
D813	A-13
D815	E-15
D872	E-15
D874	E-15

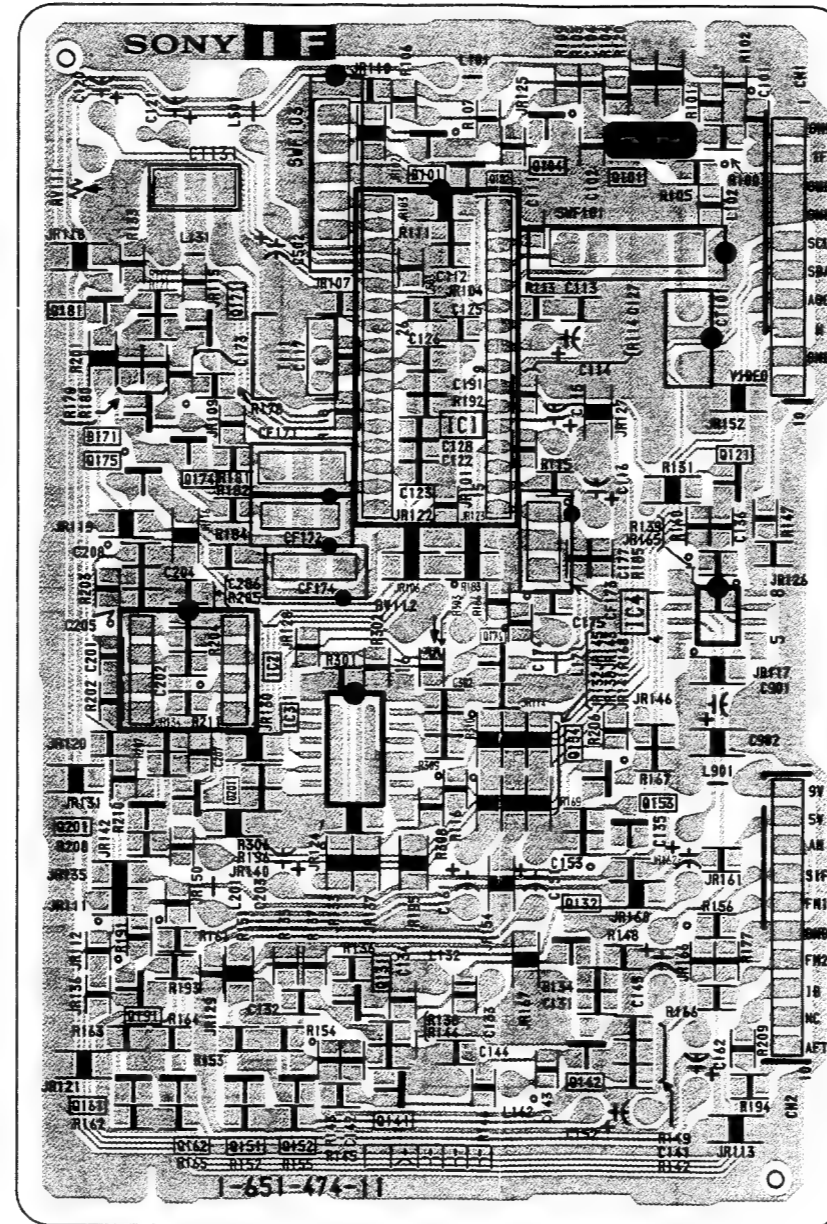








**— IF Board — (KV-28WS3B ONLY)**



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

A

B

C

D

E

F

G

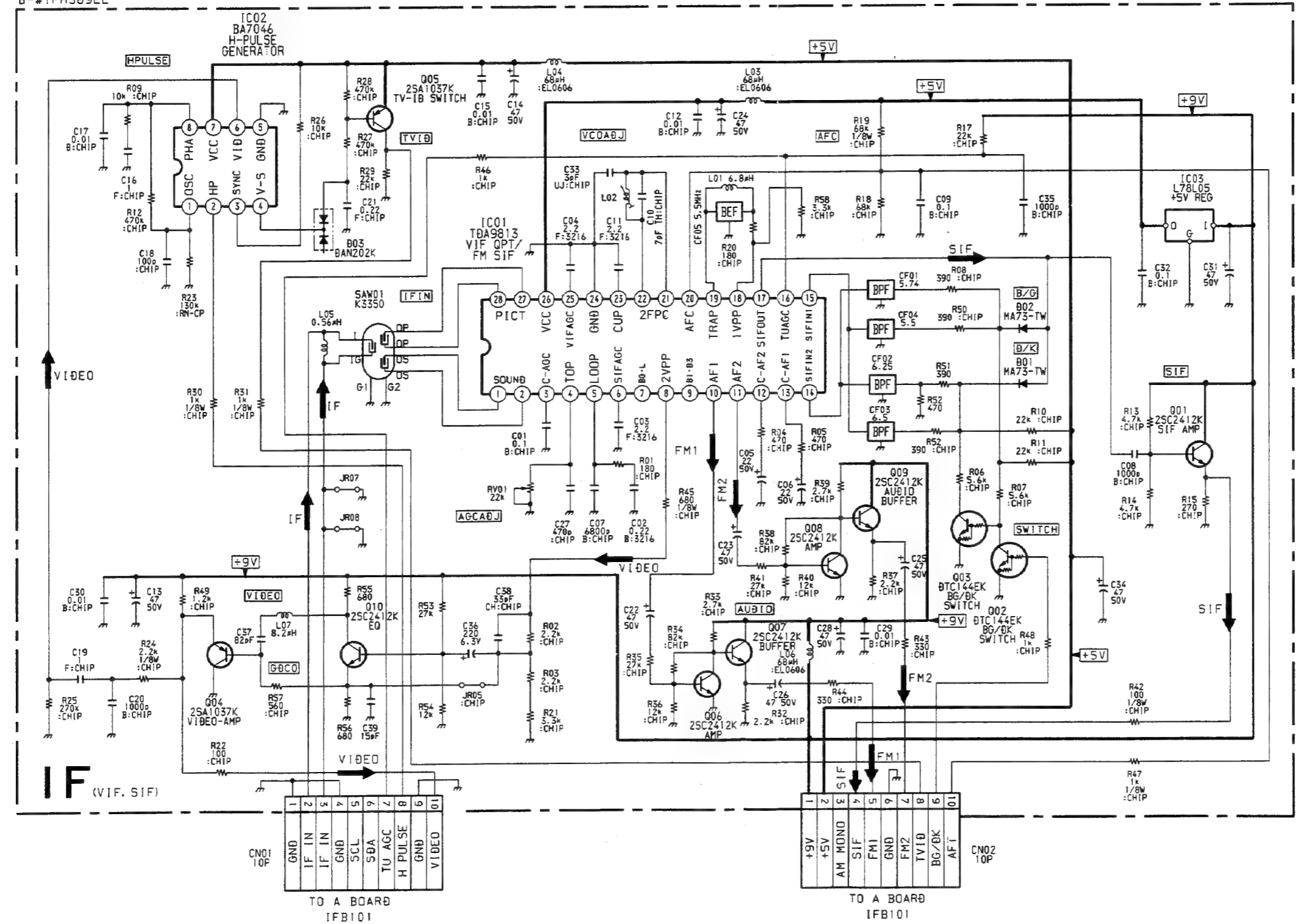
H

I

J

IFH-389WE (KV-28WS3A, 3D,3E ONLY)  
IFH-389EE (KV-28WS3K ONLY)  
IFH-395GB (KV-28WS3U ONLY)

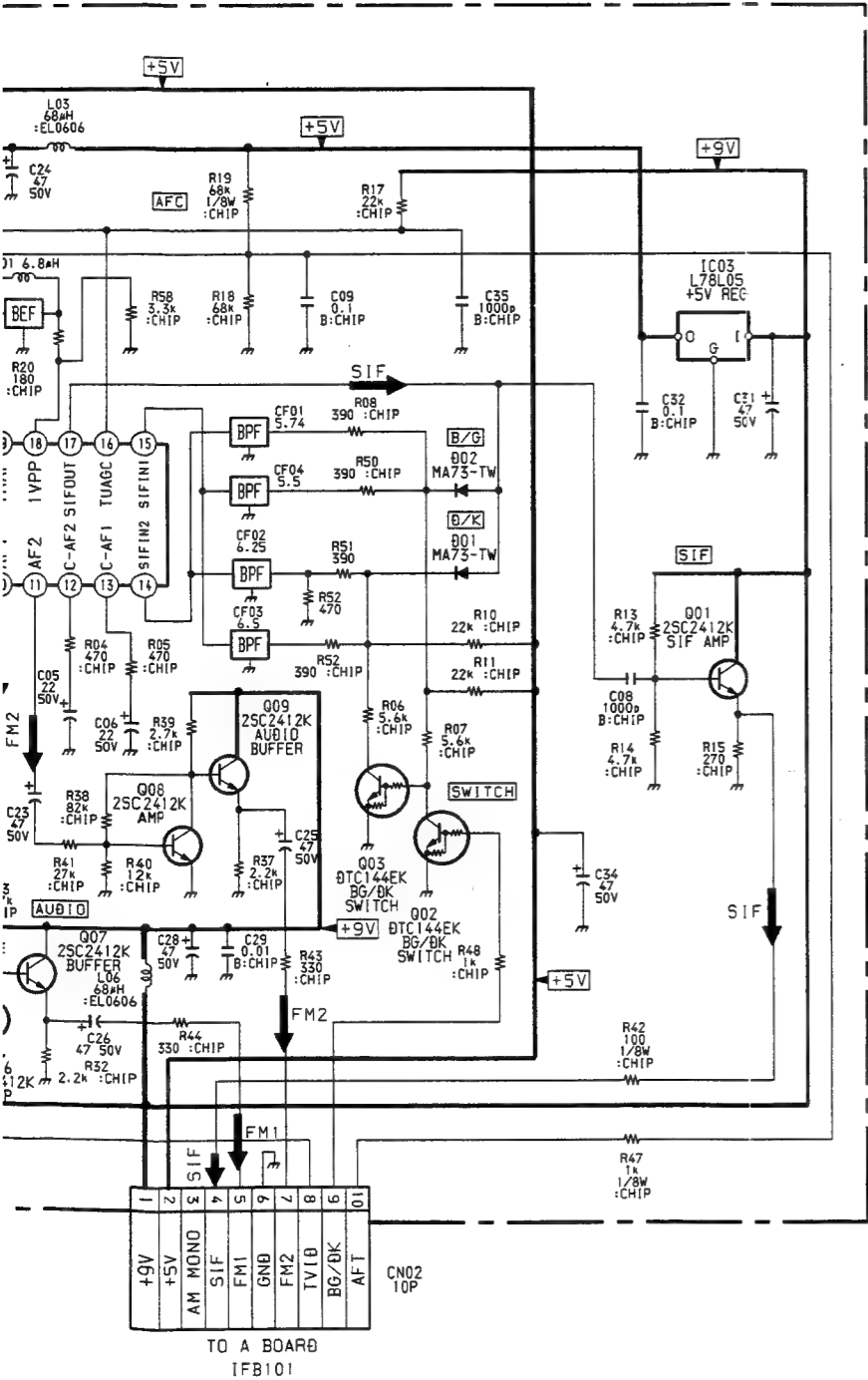
B-#IFH389EE



IF BOARD \* MARK

Model	28WS3A	28WS3D	28WS3E	28WS3K
Ref. No.				
C23	47MF 50V	47MF 50V	47MF 50V	47MF 50V
C25	47MF 50V	47MF 50V	47MF 50V	47MF 50V
C36	-	-	-	220MF 6.3V
C37	-	-	-	82PF
C38	27PF	27PF	27PF	33PF
C39	-	-	-	15PF
CF01	5.74MHz	5.74MHz	5.74MHz	5.74MHz
CF02	-	-	-	6.25MHz
CF03	6.5MHz	6.5MHz	6.5MHz	6.5MHz
CF04	5.5MHz	5.5MHz	5.5MHz	5.5MHz
CF05	5.5MHz	5.5MHz	5.5MHz	5.5MHz
D01	MA73-TX	MA73-TX	MA73-TX	MA73-TX
D02	MA73-TX	MA73-TX	MA73-TX	MA73-TX
L01	10UH	10UH	10UH	6.8UH
L07	-	-	-	8.2UH
Q02	DTC144EK	DTC144EK	DTC144EK	DTC144EK
Q03	DTC144EK	DTC144EK	DTC144EK	DTC144EK
Q08	2SC2412K	2SC2412K	2SC2412K	2SC2412K
Q09	2SC2412K	2SC2412K	2SC2412K	2SC2412K
Q10	-	-	-	2SC2412K
JR5	0:CHIP	0:CHIP	0:CHIP	-
R06	5.6K	5.6K	5.6K	5.6K
R07	5.6K	5.6K	5.6K	5.6K
R08	390	390	390	390
R10	22K	22K	22K	22K
R11	22K	22K	22K	22K
R20	220	220	220	180
R21	1K	1K	1K	3.3K
R37	2.2K	2.2K	2.2K	2.2K
R38	82K	82K	82K	82K
R39	2.7K	2.7K	2.7K	2.7K
R40	12K	12K	12K	12K
R41	27K	27K	27K	27K
R43	330	330	330	330
R45	1K	1K	1K	680
R48	1K	1K	1K	1K
R51	-	-	-	390
R52	390	390	390	390
R53	-	-	-	27K
R54	-	-	-	12K
R55	-	-	-	680
R56	-	-	-	680
R57	0:CHIP	0:CHIP	0:CHIP	560
R59	-	-	-	470
R60	-	-	-	-
R61	100	100	100	-
SAW01	K3350	K3350	K3350	K3350

8	9	10	11	12	13	14	15
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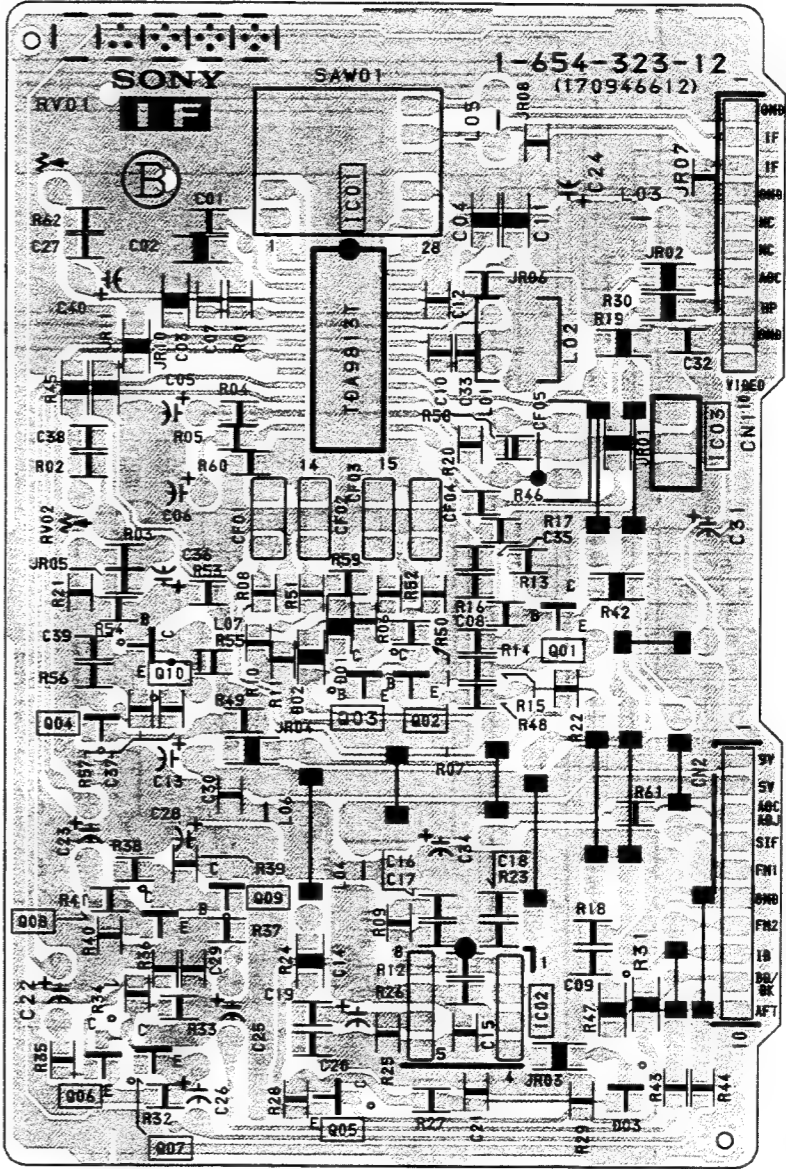
IF BOARD \* MARK

Model	28WS3A	28WS3D	28WS3E	28WS3K	28WS3U
Ref. No.					
C23	47MF 50V	47MF 50V	47MF 50V	47MF 50V	-
C25	47MF 50V	47MF 50V	47MF 50V	47MF 50V	-
C36	-	-	-	220MF 6.3V	-
C37	-	-	-	82PF	-
C38	27PF	27PF	27PF	33PF	47PF
C39	-	-	-	15PF	-
CF01	5.74MHz	5.74MHz	5.74MHz	5.74MHz	-
CF02	-	-	-	6.25MHz	-
CF03	6.5MHz	6.5MHz	6.5MHz	6.5MHz	-
CF04	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz
CF05	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz
D01	MA73-TX	MA73-TX	MA73-TX	MA73-TX	-
D02	MA73-TX	MA73-TX	MA73-TX	MA73-TX	0: CHIP
L01	10UH	10UH	10UH	6.8UH	8.2UH
L07	-	-	-	8.2UH	-
Q02	DTC144EK	DTC144EK	DTC144EK	DTC144EK	-
Q03	DTC144EK	DTC144EK	DTC144EK	DTC144EK	-
Q08	2SC2412K	2SC2412K	2SC2412K	2SC2412K	-
Q09	2SC2412K	2SC2412K	2SC2412K	2SC2412K	-
Q10	-	-	-	2SC2412K	-
JR5	0: CHIP	0: CHIP	0: CHIP	-	0: CHIP
R06	5.6K	5.6K	5.6K	5.6K	-
R07	5.6K	5.6K	5.6K	5.6K	-
R08	390	390	390	390	-
R10	22K	22K	22K	22K	-
R11	22K	22K	22K	22K	-
R20	220	220	220	180	180
R21	1K	1K	1K	3.3K	1.8K
R37	2.2K	2.2K	2.2K	2.2K	-
R38	82K	82K	82K	82K	-
R39	2.7K	2.7K	2.7K	2.7K	-
R40	12K	12K	12K	12K	-
R41	27K	27K	27K	27K	-
R43	330	330	330	330	-
R45	1K	1K	1K	680	1K
R48	1K	1K	1K	1K	-
R51	-	-	-	390	-
R52	390	390	390	390	-
R53	-	-	-	27K	-
R54	-	-	-	12K	-
R55	-	-	-	680	-
R56	-	-	-	680	-
R57	0: CHIP	0: CHIP	0: CHIP	560	0: CHIP
R59	-	-	-	470	-
R60	-	-	-	-	5.6K
R61	100	100	100	-	100
SAW01	K3350	K3350	K3350	K3350	J3352K

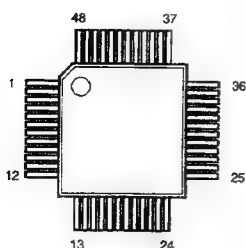
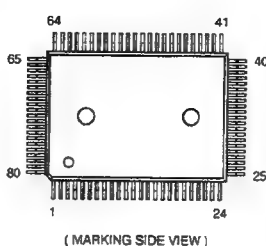


[VIF, SIF]

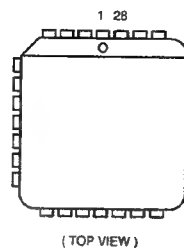
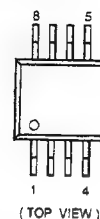
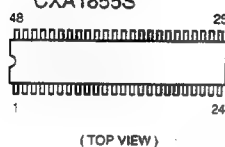
— IF Board — (KV-28WS3A, 3D, 3E, 3K, 3U ONLY)



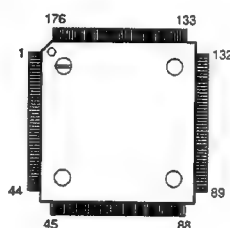
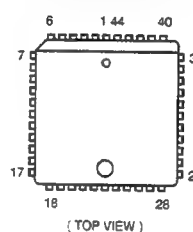
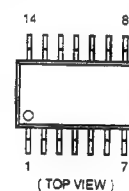
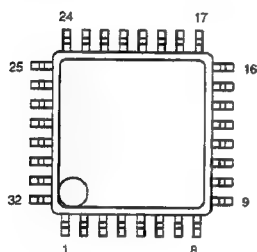
## 5-4. SEMICONDUCTORS

CXA1839Q-T6  
CXD1178QCXD2032Q-TL  
CXD2036Q-TL

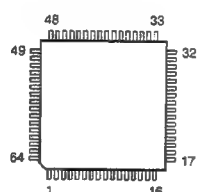
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X24164SIC7000  
μPC358C  
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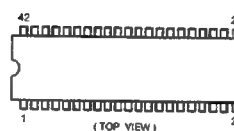
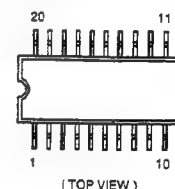
CXD2035R

EPM7032LC44-15-AE301  
P83C652FBA/526MC74F04M  
MC74HC04AF  
MC74HC74AF  
MC74HCU04F  
SN74HC04ANS  
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CXD1176Q  
CXD2300Q-T4

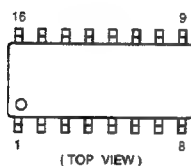
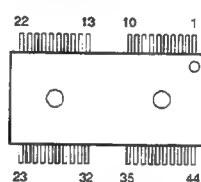
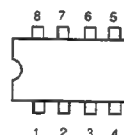
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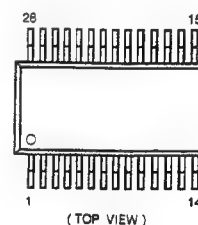
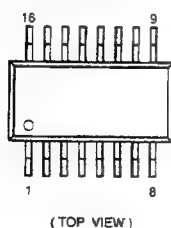
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TEA2130

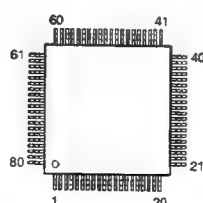
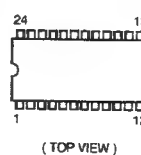
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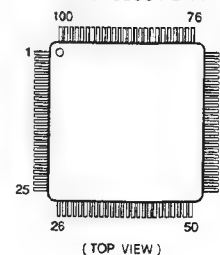
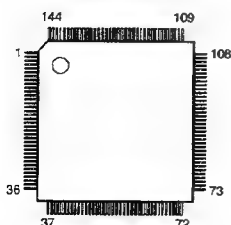
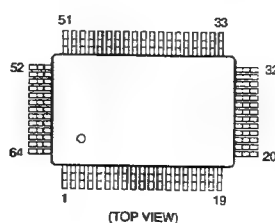
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MC74HC4053F  
NJM2284M

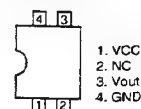
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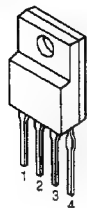
CXD2030R-TL  
CXD2031R-TLCXP85112B-622Q-TL  
SAA7283GP

MB81C4256A-70PSZG

PC123F2  
PC123FY2

1. VCC  
2. NC  
3. Vout  
4. GND

PQ05RF21  
PQ12RF21

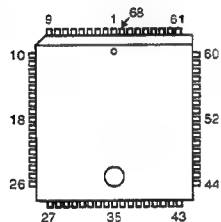


1 : V IN  
2 : V OUT  
3 : GND  
4 : ON/OFF CONTROL

PQ09RE11  
TEA7605

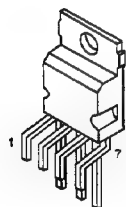


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SDA5273P-C26-GEG  
SDA9205-2GEG

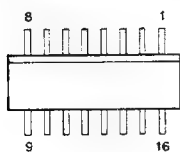


( TOP VIEW )

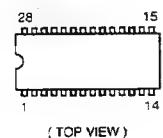
STV9379



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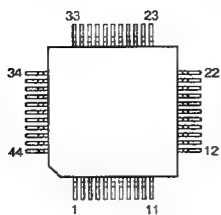


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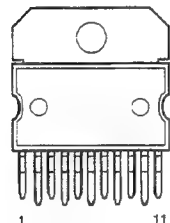


( TOP VIEW )

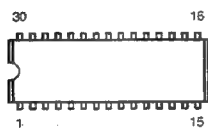
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TDA7265

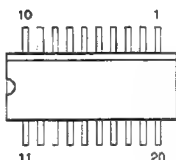


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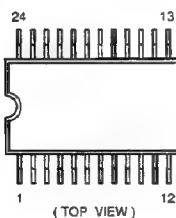


( TOP VIEW )

TDA8395T/N2



TDA9145/N3

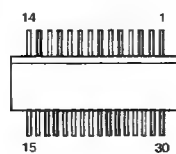


TDA9160A

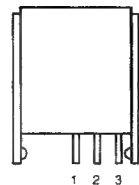


( TOP VIEW )

TDA9813T/V3  
TDA9814T/V3

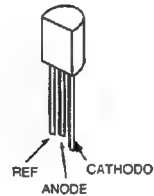


TFMY5400

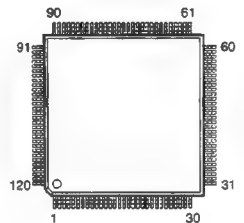


1. VCC  
2. VOUT  
3. GND

TL431CLP

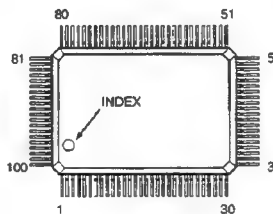


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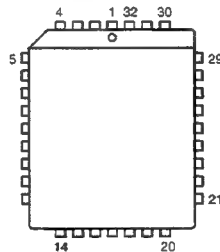
( TOP VIEW )

TMC57120-D77523PJ



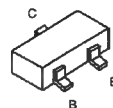
( TOP VIEW )

TMS27PC020-15FML



( TOP VIEW )

DTA114EK  
DTC114EK  
DTC124EKA-T146  
DTC144EKA-T146  
2SA1037K  
2SA1162-G  
2SC2412K  
2SC2412K-QR



DTA144ESA  
DTC144ESA



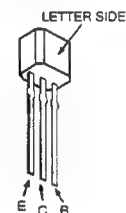
IRF610



JA101 2SA733-K  
JC501 2SA933S-R  
2SA1091-O 2SC1740S-R  
2SA1207 2SC2500-B  
2SA1837 2SC2551-O



2SC2603-F  
2SC2785-HFE



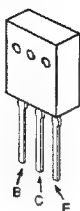
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2SC2688-LK



2SC3779C,D-AA



2SC3997CA



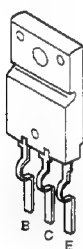
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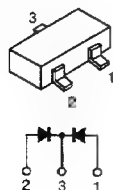
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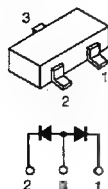
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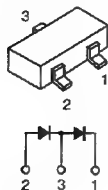
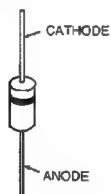
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DAP202K

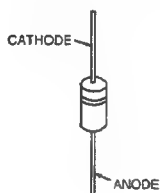


DA204K

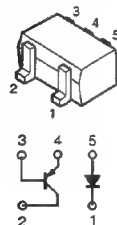
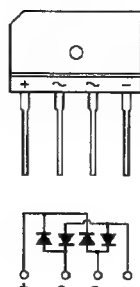
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GP08D  
RGP02-20EL-6394  
RGP10G

D1N20R

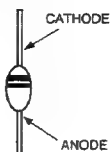
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MTZJ-T-77-9.1A  
MTZJ-5.6B  
MTZJ-6.8B  
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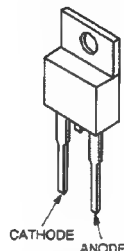
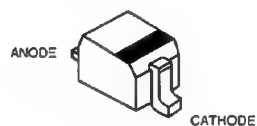
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D4SB60L  
RBA-402L

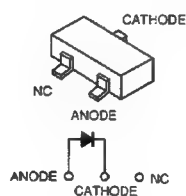
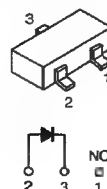
ERC38-06



ERD08M-15

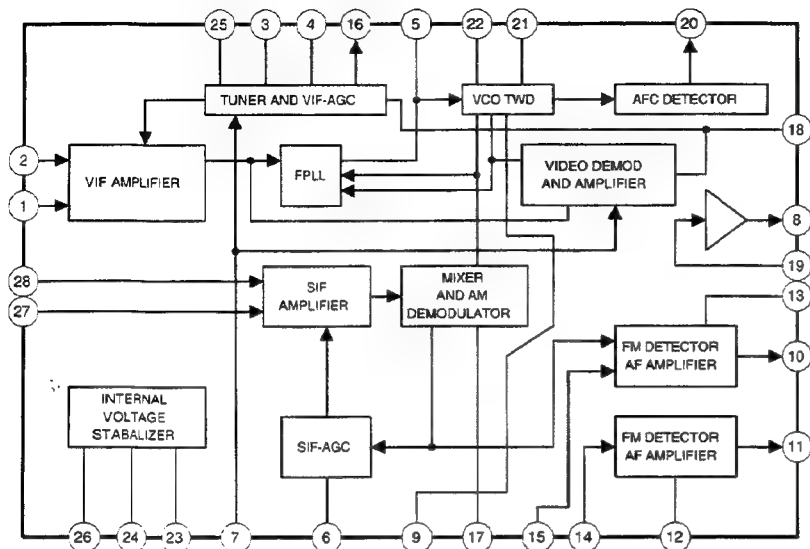
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ESAD39M-06CHVV359TRF  
MA110  
1SV214

MA3030H (TX)

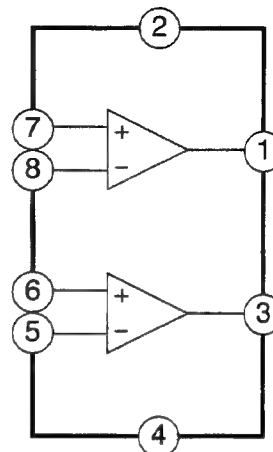
MA3039H-TX  
MA3051M-TX  
MA3056M  
MA3082M-TX  
MA3091  
RB411D  
RD5.1M-B2  
RD5.6M-B2

## IC BLOCK DIAGRAMS

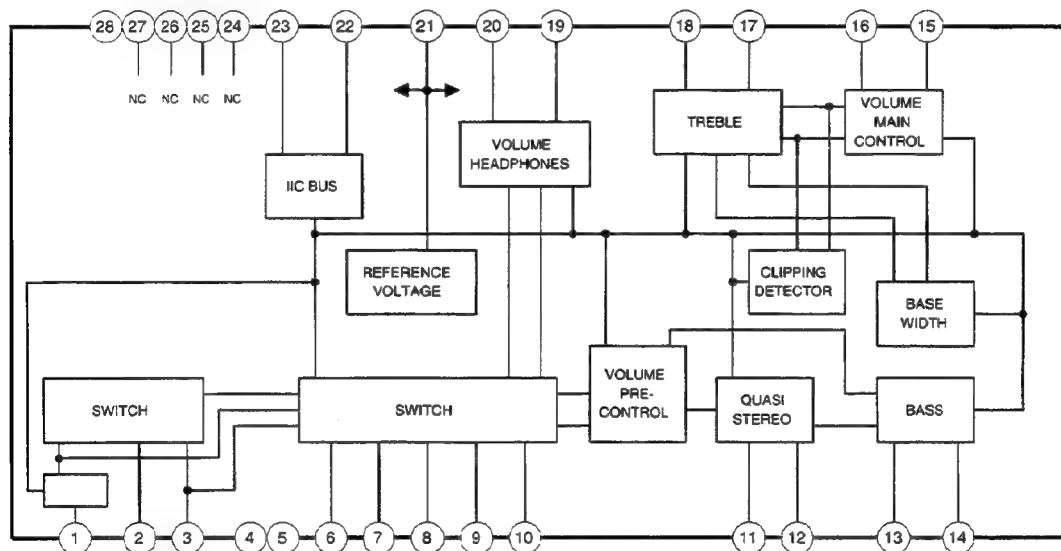
T Board IC5103 TDA9813T/TDA9814T



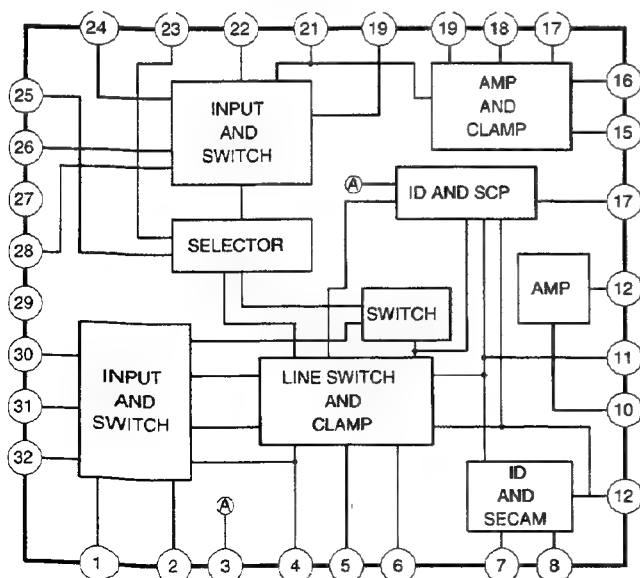
A Board IC202 TDA2822M



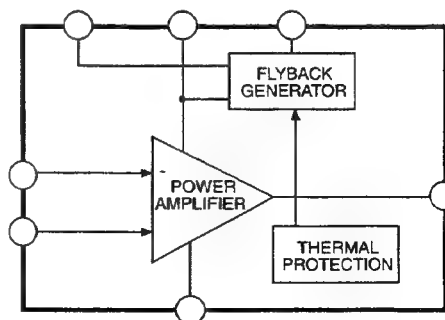
A1 Board IC3203 TDA6622-5



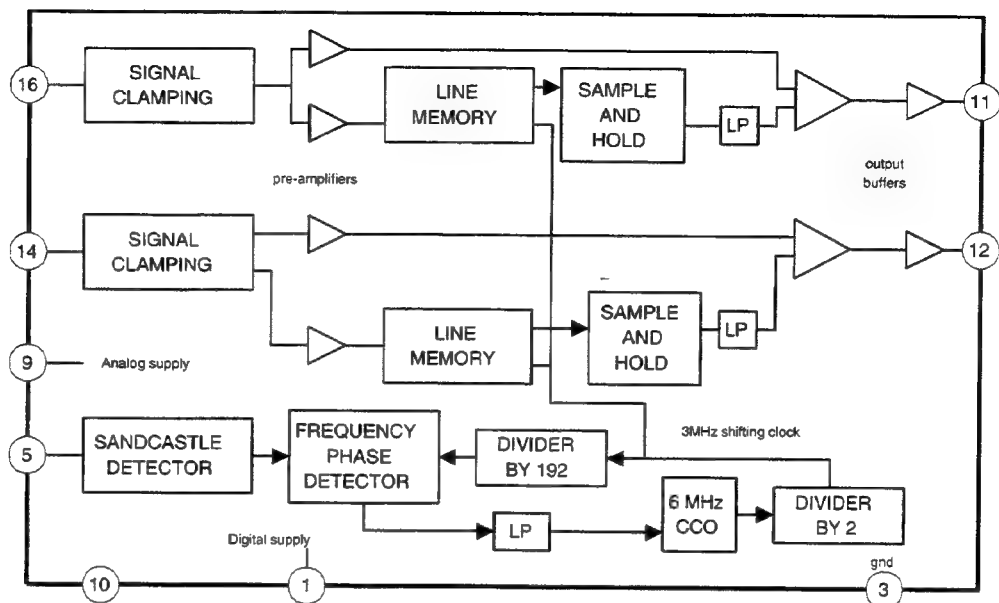
B1 Board IC1302 CXA1860Q



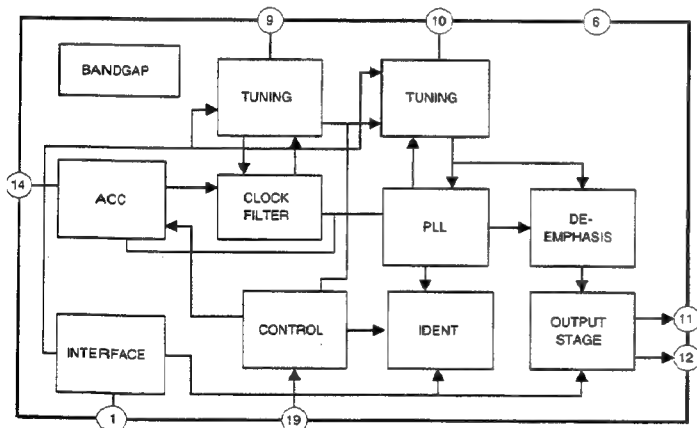
A Board IC1501 STV9379S



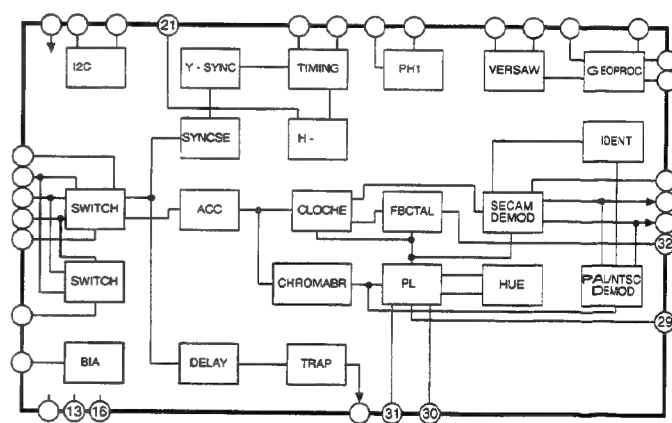
B1 Board IC3709 TDA4665T



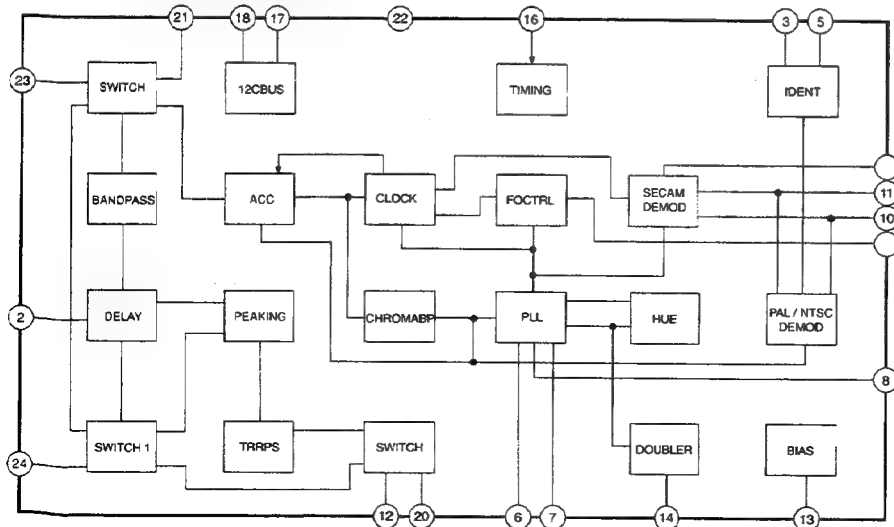
B1 Board IC1301 TDA8395ST



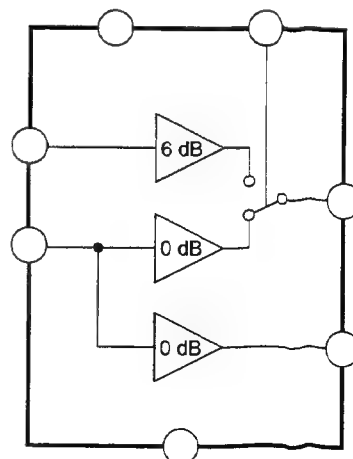
B1 Board IC3713 TDA9160A



B2 Board IC9001 TDA9145/N3



J Board IC402 TEA2114





## SECTION 6

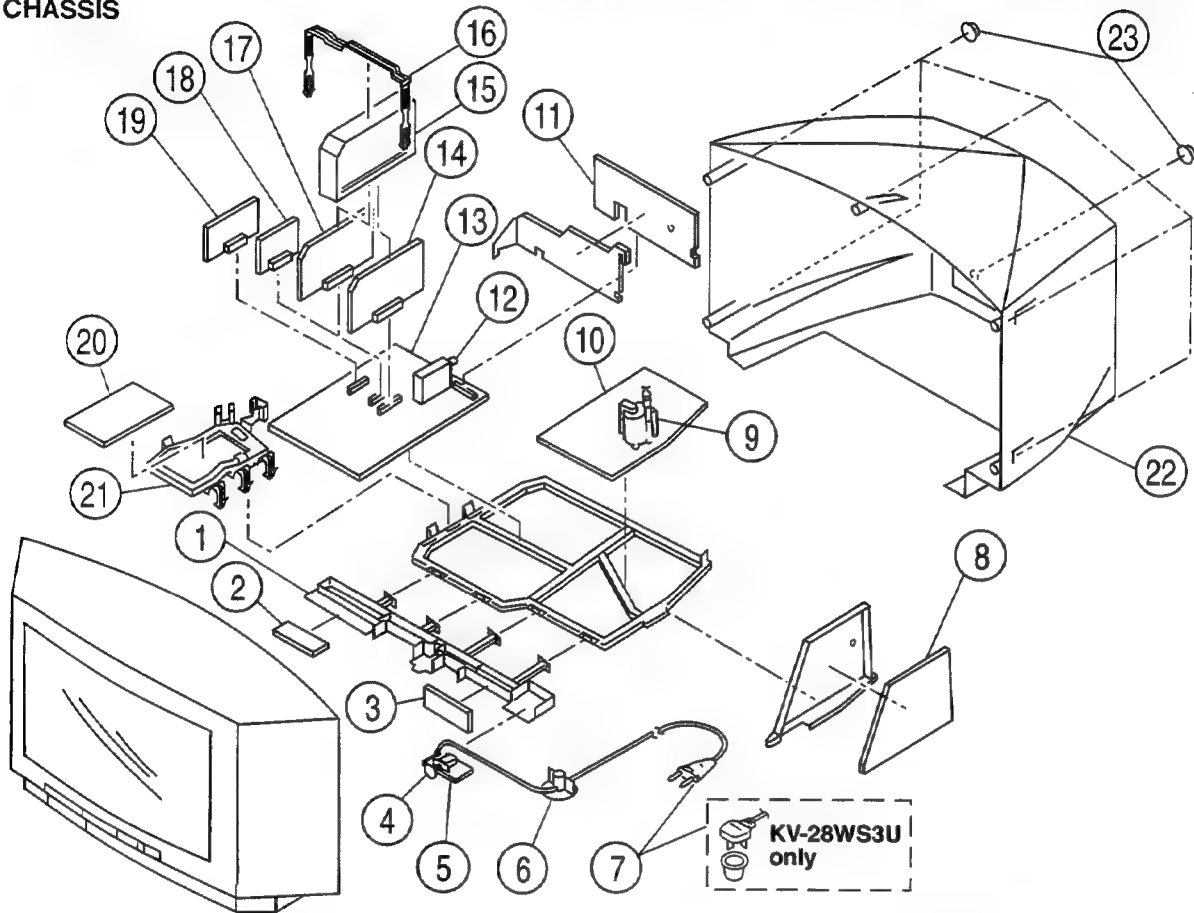
### EXPLODED VIEWS





**NOTE :**

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

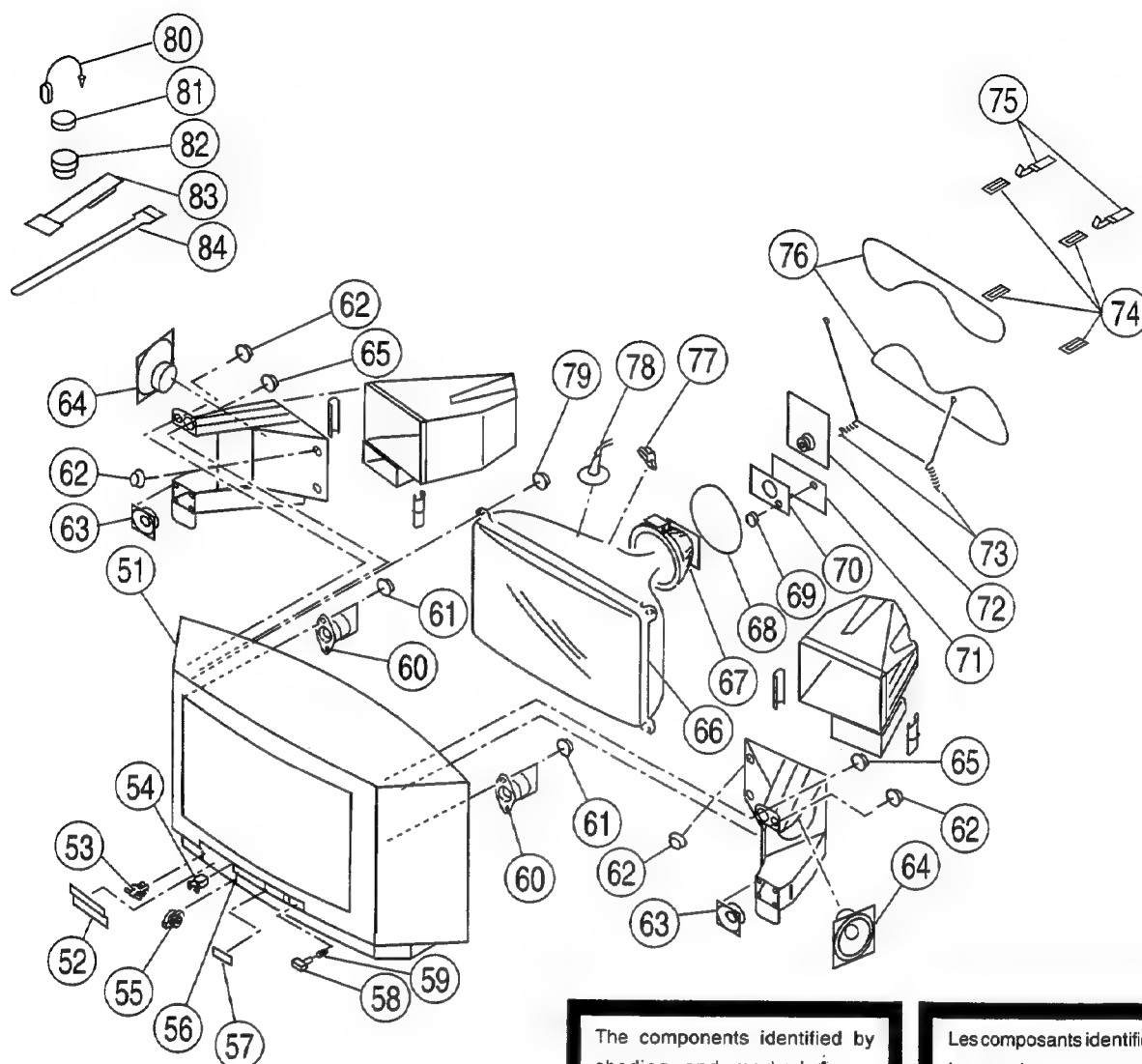
The components identified by shading and marked  are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

**6-1. CHASSIS**

REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
1	*4-050-003-01	BRACKET, H		13	*A-1632-296-A	A BOARD, COMPLETE (KV-28WS3A/28WS3D)	
2	*A-1646-098-A	H1 BOARD, COMPLETE			*A-1632-337-A	A BOARD, COMPLETE (KV-28WS3B)	
3	*A-1646-099-A	H2 BOARD, COMPLETE (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)			*A-1632-339-A	A BOARD, COMPLETE (KV-28WS3E)	
	*A-1646-108-A	H2 BOARD, COMPLETE (KV-28WS3B)			*A-1632-340-A	A BOARD, COMPLETE (KV-28WS3K)	
4	 1-571-433-21	SWITCH, PUSH (AC POWER)			*A-1632-336-A	A BOARD, COMPLETE (KV-28WS3U)	
5	*A-1624-052-A	F1 BOARD, COMPLETE		14	*A-1620-063-A	B1 BOARD, COMPLETE (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
6	*4-202-531-01	AC CORD, LOCK (SC)			*A-1620-067-A	B1 BOARD, COMPLETE (KV-28WS3B)	
7	 1-751-680-11	CORD, POWER (WITH NOISE FILTER) 2.5A/250V (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)		15	*4-050-639-01	CASE, SHIELD (MAIN) (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
	 1-590-762-11	CORD, POWER (WITH PLUG) 2.5A/250V (KV-28WS3U)		16	*4-050-641-01	SUPPORTER (2), PCB (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
8	*A-1636-009-A	G BOARD, COMPLETE		17	*A-1626-004-A	Q BOARD, COMPLETE (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
9	 1-453-187-11	TRANSFORMER ASSY, FLYBACK (MX-2661/U2E)		18	*A-1620-068-A	B2 BOARD, COMPLETE (KV-28WS3B)	
10	*A-1640-182-A	D BOARD, COMPLETE		19	*A-1630-368-A	A1 BOARD, COMPLETE	
11	*A-1651-073-A	J BOARD, COMPLETE		20	*A-1654-017-A	T BOARD, COMPLETE (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
12	1-693-315-21	TUNER (U1316) (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)			*A-1654-020-A	T BOARD, COMPLETE (KV-28WS3B)	
	1-693-314-21	TUNER (U1344) (KV-28WS3U)			*A-1654-019-A	T BOARD, COMPLETE (KV-28WS3U)	
				21	*4-050-453-01	BRACKET, T	
				22	*4-050-253-01	COVER, REAR	
				23	4-039-358-01	SCREW (4X16), (+) BY TAPPING	

## 6-2. PICTURE TUBE



The components identified by shading and marked  $\Delta$  are critical for safety.

Replace only with the part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
51	4-050-243-01	BEZNET		67	$\Delta$ 8-451-433-11	DEFLECTION YOKE (Y28G1CM)	
52	4-202-555-01	SHAFT, DOOR		68	$\Delta$ 1-452-724-11	COIL, NA ROTATION (RT-165)	
53	4-050-001-01	DOOR, CONTROL		69	4-039-356-11	SCREW (3X12), (+) BV TAPPING	
		(KV-28WS3A/28WS3D/28WS3K)		70	$\Delta$ 8-453-005-31	NECK ASSY (NA297-M3)	
	4-050-001-41	DOOR, CONTROL (KV-28WS3B)		71	*A-1644-064-A	VM BOARD, COMPLETE	
	4-050-001-21	DOOR, CONTROL (KV-28WS3E/28WS3U)		72	*A-1638-070-A	C BOARD, COMPLETE	
54	4-392-036-01	CATCHER, PUSH		73	4-200-433-01	SPRING, EXTENSION	
55	4-045-250-01	DAMPER		74	4-202-463-01	CLIP, DGC (25")	
56	4-050-002-01	PLATE, ORNAMENTAL		75	*4-050-252-01	SPACER, DGC	
57	4-050-000-01	WINDOW, ORNAMENT		76	$\Delta$ 1-409-646-11	COIL, DEGAUSSEING	
58	4-049-999-01	BUTTON, POWER		77	3-704-495-01	SPACER, DY	
59	4-202-964-01	SPRING		78	$\Delta$ 1-540-006-22	CAP ASSY, HIGH-VOLTAGE	
60	1-504-418-21	SPEAKER (5CM)		79	4-036-188-01	SCREW (M), PT	
61	4-039-355-11	SCREW (4X12), (+) BV TAPPING		80	4-308-870-00	CLIP, LEAD WIRE	
62	4-039-358-01	SCREW (4X16), (+) BV TAPPING		81	1-452-032-00	MAGNET, DISK; 10MM $\varnothing$	
63	1-505-154-11	SPEAKER (6.5CM)		82	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\varnothing$	
64	1-505-155-11	SPEAKER (10CM)		83	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
65	4-302-404-03	SCREW (WASHER HEAD) (+P 4X16)		84	3-701-007-00	BAND, BINDING	
66	$\Delta$ 8-737-762-05	PICTURE TUBE (SD-284) (W66LGY010X)					

## SECTION 7

### ELECTRICAL PARTS LIST

When indicating parts by reference number, please include the board name.

**CAPACITORS**

MF : mF, PF : mmF

**COILS**MMH : mH,  $\mu$ H : mH**B1**

- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

**RESISTORS**

- All resistors are in ohms
- F : nonflammable

The components identified by shading and marked \* are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque \* sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1620-063-A	B1 BOARD, COMPLETE (KV-28WS3A/28WS3D/ ***** 28WS3E/28WS3K/ 28WS3U)		C319	1-163-038-91	CERAMIC CHIP 0.1MF	25V
	*A-1620-067-A	B1 BOARD, COMPLETE (KV-28WS3B) *****		C320	1-163-038-91	CERAMIC CHIP 0.1MF	25V
	< CAPACITOR >			C321	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C01	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C322	1-104-664-11	ELECT 47MF	20% 25V
C02	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C323	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C03	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C324	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C04	1-163-038-91	CERAMIC CHIP 0.1MF	25V				
C05	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C325	1-104-664-11	ELECT 47MF	20% 25V
C06	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C326	1-126-933-11	ELECT 100MF	20% 16V
C07	1-104-664-11	ELECT 47MF	20% 25V	C327	1-126-933-11	ELECT 100MF	20% 16V
C08	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C328	1-126-933-11	ELECT 100MF	20% 16V
C09	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C329	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C10	1-163-038-91	CERAMIC CHIP 0.1MF	25V				
C11	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C330	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C12	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C331	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C14	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C332	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C15	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C333	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C16	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C334	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C17	1-163-038-91	CERAMIC CHIP 0.1MF	25V				
C18	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C335	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
C19	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C336	1-163-096-00	CERAMIC CHIP 13PF	5% 50V
C20	1-163-124-00	CERAMIC CHIP 200PF	5% 50V	C337	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C21	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	C338	1-104-664-11	ELECT 47MF	20% 25V
				C339	1-126-964-11	ELECT 10MF	20% 50V
C22	1-104-664-11	ELECT 47MF	20% 25V				
C23	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C340	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C301	1-163-111-00	CERAMIC CHIP 56PF	5% 50V	C341	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C302	1-163-031-11	CERAMIC CHIP 0.01MF	50V	C342	1-126-964-11	ELECT 10MF	20% 50V
C303	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C343	1-126-964-11	ELECT 10MF	20% 50V
				C344	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C304	1-163-038-91	CERAMIC CHIP 0.1MF	25V				
C305	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C501	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C306	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C502	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C307	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C503	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C308	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C504	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C505	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C309	1-163-038-91	CERAMIC CHIP 0.1MF	25V				
C310	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C506	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C311	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C507	1-104-664-11	ELECT 47MF	20% 25V
C312	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C508	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C313	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C509	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C510	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C315	1-163-031-11	CERAMIC CHIP 0.01MF	50V				
C316	1-163-119-00	CERAMIC CHIP 120PF	5% 50V	C511	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C317	1-163-031-11	CERAMIC CHIP 0.01MF	50V	C512	1-163-037-11	CERAMIC CHIP 0.022MF (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	10% 25V
C318	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C513	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C514	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
				C515	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C516	1-162-568-11	CERAMIC CHIP 0.33MF	10% 16V
				C517	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C518	1-163-038-91	CERAMIC CHIP 0.1MF	25V

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C519	1-124-902-00	ELECT 0.47MF	20% 50V	C558	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
C520	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C559	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
C522	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C560	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C525	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C561	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C527	1-164-326-91	CERAMIC CHIP 0.47MF	25V	C563	1-104-664-11	ELECT 47MF	20% 25V
C528	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C564	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C530	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C1301	1-163-031-11	(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U) CERAMIC CHIP 0.01MF	50V
C531	1-104-664-11	ELECT 47MF	20% 25V	C1302	1-126-964-11	ELECT 10MF	20% 50V
C532	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C1303	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C533	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C1306	1-126-964-11	ELECT 10MF	20% 50V
C534	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C1307	1-126-964-11	ELECT 10MF	20% 50V
C535	1-164-004-91	CERAMIC CHIP 0.1MF	10% 25V	C1308	1-126-964-11	ELECT 10MF	20% 50V
	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C1309	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C536	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C1310	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C537	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C1311	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C538	1-104-664-11	ELECT 47MF	20% 25V	C1313	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C539	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C1314	1-126-964-11	ELECT 10MF	20% 50V
C540	1-104-664-11	ELECT 47MF	20% 25V	C1315	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C541	1-104-664-11	ELECT 47MF	20% 25V	C1316	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C542	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C1317	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C543	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3B) 25V	C1318	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C544	1-104-664-11	ELECT 47MF	20% 25V	C1319	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C545	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C1320	1-164-004-91	CERAMIC CHIP 0.1MF	10% 25V
C546	1-163-038-91	CERAMIC CHIP 0.1MF	25V		1-163-037-11	(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U) CERAMIC CHIP 0.022MF	10% 25V
C547	1-126-924-11	ELECT 330MF	20% 10V	C1321	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C548	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C1322	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C549	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U) 25V	C1323	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
C550	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U) 25V	C1324	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C551	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U) 25V	C1347	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C552	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U) 25V	C1348	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C553	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C1349	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C554	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U) 25V	C1350	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C555	1-163-038-91	CERAMIC CHIP 0.1MF	(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U) 25V	C1351	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C556	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C1352	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C557	1-163-111-00	CERAMIC CHIP 56PF	5% 50V	C1431	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C1432	1-104-664-11	ELECT 47MF	20% 25V
				C1436	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C1443	1-104-664-11	ELECT 47MF	20% 25V
				C3700	1-104-664-11	ELECT 47MF	20% 25V
				C3701	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3702	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3703	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3707	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3708	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3709	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3710	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3711	1-126-965-11	ELECT 22MF	20% 50V
				C3712	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3713	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3714	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3715	1-104-664-11	ELECT 47MF	20% 25V
				C3716	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3717	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3718	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3719	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
				C3720	1-163-038-91	CERAMIC CHIP 0.1MF	25V
				C3721	1-163-038-91	CERAMIC CHIP 0.1MF	25V

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REF.NO.	PART NO.	DESCRIPTION	REMARK
C3722	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3723	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3724	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3725	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3726	1-104-664-11	ELECT 47MF	20% 25V
C3727	1-126-964-11	ELECT 10MF	20% 50V
C3730	1-126-964-11	ELECT 10MF	20% 50V
C3731	1-126-049-91	ELECT 10MF	20% 50V
C3732	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3733	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3734	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3735	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3736	1-104-664-11	ELECT 47MF	20% 25V
C3737	1-164-346-11	CERAMIC CHIP 1MF	16V
C3738	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3739	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3740	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3741	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3743	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3744	1-126-965-11	ELECT 22MF	20% 50V
C3745	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3746	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3747	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3748	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C3749	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3750	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3751	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3752	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C3753	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C3754	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C3755	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C3756	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3757	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3759	1-163-038-91	CERAMIC CHIP 0.1MF	25V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3760	1-164-005-11	CERAMIC CHIP 0.47MF	16V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3761	1-164-038-11	CERAMIC 2PF	0.25PF 50V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3764	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3767	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3768	1-164-505-11	CERAMIC CHIP 2.2MF	16V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3769	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3770	1-164-038-11	CERAMIC 2PF	0.25PF 50V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3771	1-104-664-11	ELECT 47MF	20% 25V
C3772	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3773	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3774	1-124-903-11	ELECT 1MF	20% 50V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3775	1-163-038-91	CERAMIC CHIP 0.1MF	25V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3776	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3777	1-163-038-91	CERAMIC CHIP 0.1MF	25V

REF.NO.	PART NO.	DESCRIPTION	REMARK
C3778	1-104-664-11	ELECT 47MF	20% 25V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
C3779	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C3782	1-163-143-00	CERAMIC CHIP 0.0012MF	5% 50V
C3783	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
C3790	1-163-251-91	CERAMIC CHIP 100PF	5% 50V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
	1-163-259-91	CERAMIC CHIP 220PF	5% 50V
		(KV-28WS3B)	
< CONNECTOR >			
CN0301	1-695-513-21	SOCKET, CONNECTOR 30P	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
CN0302	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P	
< DIODE >			
D01	8-719-914-44	DIODE DAP202K	
D301	8-719-031-68	DIODE HVU359TRF	
D302	8-719-031-68	DIODE HVU359TRF	
D303	8-719-404-46	DIODE MA110	
D1301	8-719-404-46	DIODE MA110	
D1302	8-719-914-43	DIODE DAN202K	
D1304	8-719-914-43	DIODE DAN202K	
D1309	8-719-914-43	DIODE DAN202K	
D3700	8-719-105-91	DIODE RD5.6M-B2	
D3701	8-719-031-68	DIODE HVU359TRF	
D3702	8-719-031-68	DIODE HVU359TRF	
D3703	8-719-975-40	DIODE RB411D	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
< FERRITE BEAD >			
FB3700	1-414-234-11	INDUCTOR, FERRITE BEAD	
< ENCAPSULATED FILTER >			
FL01	1-233-446-11	FILTER, LOW PASS	
FL02	1-233-438-11	FILTER, LOW PASS	
FL03	1-233-438-11	FILTER, LOW PASS	
FL301	1-236-620-11	FILTER, LOW PASS	
FL302	1-236-620-11	FILTER, LOW PASS	
FL352	1-233-436-11	FILTER, LOW PASS (KV-28WS3B)	
FL353	1-233-435-11	FILTER, LOW PASS (KV-28WS3B)	
FL355	1-233-436-11	FILTER, LOW PASS (KV-28WS3B)	
FL1301	1-233-434-11	FILTER, LOW PASS	
FL1302	1-233-434-11	FILTER, LOW PASS	
FL3700	1-233-436-11	FILTER, LOW PASS	
FL3701	1-233-436-11	FILTER, LOW PASS	
FL3702	1-233-435-11	FILTER, LOW PASS	
< IC >			
IC01	8-752-338-46	IC CXD1178Q	
IC02	8-752-370-87	IC CXD2035R	
IC04	8-752-365-06	IC CXK48324R-1	
IC05	8-752-365-06	IC CXK48324R-1	
IC06	8-759-362-96	IC MB81C1501PFTN-G-D-ER	
IC07	8-752-376-16	IC CXD2036Q-TL	
IC301	8-752-357-86	IC CXD2300Q-T4	
IC302	8-752-370-77	IC CXD2030R-TL	
IC501	8-759-925-76	IC SN74HC08ANS	
IC502	8-752-370-85	IC CXD2032Q-TL	

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
IC503	8-752-357-62	IC CXD2307R		L3702	1-408-403-00	INDUCTOR 3.3UH	
IC504	8-759-350-07	IC SDA9205-2GEG (KV-28WS3B)		L3703	1-408-403-00	INDUCTOR 3.3UH	
IC505	8-759-033-43	IC MC74F244M		L3704	1-408-403-00	INDUCTOR 3.3UH	
IC506	8-759-033-43	IC MC74F244M		L3705	1-408-403-00	INDUCTOR 3.3UH	
IC507	8-759-925-74	IC SN74HC04ANS		L3706	1-414-253-91	INDUCTOR 5.6UH	
IC509	8-759-033-43	IC MC74F244M		L3707	1-408-403-00	INDUCTOR 3.3UH	
IC510	8-759-034-91	IC MC74HC74AF (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)		L3708	1-408-403-00	INDUCTOR 3.3UH	
IC511	8-759-925-76	IC SN74HC08ANS (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)		< TRANSISTOR >			
IC512	8-759-034-91	IC MC74HC74AF (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)		Q01	8-729-216-22	TRANSISTOR 2SA1162-G	
IC513	8-759-034-91	IC MC74HC74AF (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)		Q02	8-729-216-22	TRANSISTOR 2SA1162-G	
IC1301	8-759-368-89	IC TDA8395T/N2		Q03	8-729-216-22	TRANSISTOR 2SA1162-G	
IC1302	8-752-070-58	IC CXA1860Q-T4		Q04	8-729-216-22	TRANSISTOR 2SA1162-G	
IC1305	8-759-032-11	IC MC74HC04AF		Q05	8-729-216-22	TRANSISTOR 2SA1162-G	
IC3701	8-759-362-96	IC MB81C1501PFTN-G-D-ER		Q06	8-729-216-22	TRANSISTOR 2SA1162-G	
IC3702	8-759-362-96	IC MB81C1501PFTN-G-D-ER		Q301	8-729-216-22	TRANSISTOR 2SA1162-G	
IC3703	8-759-362-96	IC MB81C1501PFTN-G-D-ER		Q302	8-729-216-22	TRANSISTOR 2SA1162-G	
IC3704	8-752-337-04	IC CXD1176Q		Q303	8-729-216-22	TRANSISTOR 2SA1162-G	
IC3705	8-752-334-49	IC CXD1172AM		Q304	8-729-216-22	TRANSISTOR 2SA1162-G	
IC3706	8-759-262-03	IC MC14577CF		Q305	8-729-216-22	TRANSISTOR 2SA1162-G	
IC3707	8-759-011-65	IC MC74HC4053F		Q306	8-729-920-74	TRANSISTOR 2SC2412K-QR	
IC3708	8-759-352-06	IC CXD2031R-65846GJ0153EN		Q307	8-729-920-74	TRANSISTOR 2SC2412K-QR	
IC3709	8-759-288-85	IC TDA4665T-T		Q308	8-729-920-74	TRANSISTOR 2SC2412K-QR	
IC3710	8-759-925-74	IC SN74HC04ANS		Q309	8-729-920-74	TRANSISTOR 2SC2412K-QR	
IC3712	8-759-100-94	IC UPC358G2		Q351	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3B)	
IC3713	8-759-183-35	IC TDA9160A (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)		Q352	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3B)	
IC3714	8-759-009-02	IC MC14046BF		Q353	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3B)	
< COIL >				Q354	8-729-216-22	TRANSISTOR 2SA1162-G (KV-28WS3B)	
L01	1-408-397-00	INDUCTOR 1UH		Q356	8-729-216-22	TRANSISTOR 2SA1162-G (KV-28WS3B)	
L02	1-408-397-00	INDUCTOR 1UH		Q358	8-729-216-22	TRANSISTOR 2SA1162-G (KV-28WS3B)	
L301	1-408-403-00	INDUCTOR 3.3UH		Q359	8-729-900-53	TRANSISTOR DTC114EK	
L302	1-408-403-00	INDUCTOR 3.3UH		Q360	8-729-901-04	TRANSISTOR DTA114EK	
L303	1-408-403-00	INDUCTOR 3.3UH		Q501	8-729-216-22	TRANSISTOR 2SA1162-G	
L304	1-414-248-11	INDUCTOR 2.2UH		Q502	8-729-216-22	TRANSISTOR 2SA1162-G	
L305	1-414-248-11	INDUCTOR 2.2UH		Q503	8-729-216-22	TRANSISTOR 2SA1162-G	
L306	1-408-403-00	INDUCTOR 3.3UH		Q504	8-729-216-22	TRANSISTOR 2SA1162-G	
L307	1-408-397-00	INDUCTOR 1UH		Q505	8-729-119-78	TRANSISTOR 2SC2785-HFE (KV-28WS3B)	
L308	1-408-397-00	INDUCTOR 1UH		Q506	8-729-216-22	TRANSISTOR 2SA1162-G (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
L501	1-408-397-00	INDUCTOR 1UH (KV-28WS3B)		Q507	8-729-216-22	TRANSISTOR 2SA1162-G	
L502	1-408-397-00	INDUCTOR 1UH (KV-28WS3B)		Q508	8-729-216-22	TRANSISTOR 2SA1162-G	
L503	1-414-243-11	INDUCTOR 1UH		Q509	8-729-216-22	TRANSISTOR 2SA1162-G	
L504	1-414-243-11	INDUCTOR 1UH		Q510	8-729-216-22	TRANSISTOR 2SA1162-G (KV-28WS3B)	
L505	1-414-243-11	INDUCTOR 1UH		Q1301	8-729-920-74	TRANSISTOR 2SC2412K-QR	
L506	1-408-397-00	INDUCTOR 1UH		Q1302	8-729-920-74	TRANSISTOR 2SC2412K-QR	
L507	1-408-397-00	INDUCTOR 1UH		Q1303	8-729-920-74	TRANSISTOR 2SC2412K-QR	
L508	1-408-397-00	INDUCTOR 1UH		Q1304	8-729-920-74	TRANSISTOR 2SC2412K-QR	
L509	1-408-397-00	INDUCTOR 1UH		Q1305	8-729-920-74	TRANSISTOR 2SC2412K-QR	
L510	1-408-397-00	INDUCTOR 1UH (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)		Q1306	8-729-920-74	TRANSISTOR 2SC2412K-QR	
L511	1-408-397-00	INDUCTOR 1UH (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)		Q1307	8-729-920-74	TRANSISTOR 2SC2412K-QR	
L512	1-408-405-00	INDUCTOR 4.7UH		Q1316	8-729-920-74	TRANSISTOR 2SC2412K-QR	
L513	1-408-405-00	INDUCTOR 4.7UH		Q1317	8-729-920-74	TRANSISTOR 2SC2412K-QR	
L1406	1-408-403-00	INDUCTOR 3.3UH		Q1318	8-729-216-22	TRANSISTOR 2SA1162-G	
L3700	1-408-403-00	INDUCTOR 3.3UH		Q1319	8-729-216-22	TRANSISTOR 2SA1162-G	
L3700	1-408-403-00	INDUCTOR 3.3UH		Q3700	8-729-920-74	TRANSISTOR 2SC2412K-QR	
				Q3701	8-729-920-74	TRANSISTOR 2SC2412K-QR	
				Q3703	8-729-920-74	TRANSISTOR 2SC2412K-QR	
				Q3704	8-729-920-74	TRANSISTOR 2SC2412K-QR	
				Q3706	8-729-900-53	TRANSISTOR DTC114EK	
				Q3708	8-729-920-74	TRANSISTOR 2SC2412K-QR	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
Q3709	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q3710	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q3712	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q3713	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q3714	8-729-027-43	TRANSISTOR DTC114EKA	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	

## &lt; RESISTOR &gt;

R01	1-216-629-11	METAL CHIP	120	0.50%	1/10W	
R02	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R03	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R04	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R05	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R06	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R07	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R08	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R09	1-216-662-11	METAL CHIP	3K	0.50%	1/10W	
R24	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)				
	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
		(KV-28WS3B)				
R25	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)				
	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
		(KV-28WS3B)				
R26	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R27	1-216-047-91	METAL GLAZE	820	5%	1/10W	
R28	1-216-047-91	METAL GLAZE	820	5%	1/10W	
R29	1-216-047-91	METAL GLAZE	820	5%	1/10W	
R36	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
R37	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)				
	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
		(KV-28WS3B)				
R38	1-216-631-11	METAL CHIP	150	0.50%	1/10W	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)				
	1-216-627-11	METAL CHIP	100	0.50%	1/10W	
		(KV-28WS3B)				
R53	1-216-295-91	METAL GLAZE	0	5%	1/10W	
R56	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
		(KV-28WS3B)				
R57	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)				
R58	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R59	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R60	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R61	1-216-295-91	METAL GLAZE	0	5%	1/10W	
R63	1-216-295-91	METAL GLAZE	0	5%	1/10W	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)				
R301	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R302	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R303	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R304	1-208-767-11	METAL CHIP	240	0.50%	1/10W	
R305	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R306	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R307	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R308	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R309	1-216-664-11	METAL CHIP	3.6K	0.50%	1/10W	
R310	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R311	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	

R312	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R313	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R314	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R315	1-208-767-11	METAL CHIP	240	0.50%	1/10W	
R316	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R317	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R318	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R319	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R320	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R321	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R322	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R323	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R324	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R325	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R326	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R327	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R328	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R329	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R330	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R331	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R332	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R333	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R334	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R335	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R336	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R337	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R338	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R339	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R356	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
		(KV-28WS3B)				
R357	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
		(KV-28WS3B)				
R358	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
		(KV-28WS3B)				
R359	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
		(KV-28WS3B)				
R360	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
		(KV-28WS3B)				
R361	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
		(KV-28WS3B)				
R362	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W	
		(KV-28WS3B)				
R363	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
		(KV-28WS3B)				
R364	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
		(KV-28WS3B)				
R365	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
		(KV-28WS3B)				
R367	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
		(KV-28WS3B)				
R368	1-216-660-11	METAL CHIP	2.4K	0.50%	1/10W	
		(KV-28WS3B)				
R372	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
		(KV-28WS3B)				
R373	1-216-660-11	METAL CHIP	2.4K	0.50%	1/10W	
		(KV-28WS3B)				
R374	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R375	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R376	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R377	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R378	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
R501	1-216-025-91	METAL GLAZE 100 5%	1/10W
R502	1-216-025-91	METAL GLAZE 100 5%	1/10W
R505	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R506	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R507	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R508	1-216-632-11	METAL CHIP 160 0.50%	1/10W
R509	1-216-631-11	METAL CHIP 150 0.50%	1/10W
R510	1-216-631-11	METAL CHIP 150 0.50%	1/10W
R511	1-216-663-11	METAL CHIP 3.3K 0.50%	1/10W
R512	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R513	1-216-659-11	METAL CHIP 2.2K 0.50%	1/10W
R514	1-216-049-91	METAL GLAZE 1K 5%	1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R515	1-216-091-00	METAL GLAZE 56K 5%	1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R516	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R517	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R518	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R519	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R520	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R521	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R522	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R523	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R524	1-216-121-91	METAL GLAZE 1M 5%	1/10W
R528	1-216-025-91	METAL GLAZE 100 5%	1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R529	1-216-756-11	METAL CHIP 150K 0.50%	1/10W
R530	1-216-047-91	METAL GLAZE 820 5%	1/10W
R531	1-216-047-91	METAL GLAZE 820 5%	1/10W
R532	1-216-295-91	METAL GLAZE 0 5%	1/10W (KV-28WS3B)
R535	1-216-047-91	METAL GLAZE 820 5%	1/10W
R536	1-216-025-91	METAL GLAZE 100 5%	1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R537	1-216-049-91	METAL GLAZE 1K 5%	1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R538	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-28WS3B)
R539	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-28WS3B)
R540	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-28WS3B)
R554	1-216-665-11	METAL CHIP 3.9K 0.50%	1/10W (KV-28WS3B)
R555	1-216-666-11	METAL CHIP 4.3K 0.50%	1/10W (KV-28WS3B)
R556	1-216-631-11	METAL CHIP 150 0.50%	1/10W (KV-28WS3B)
R557	1-216-603-11	METAL CHIP 10 0.50%	1/10W (KV-28WS3B)
R558	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-28WS3B)
R559	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-28WS3B)
R560	1-216-121-91	METAL GLAZE 1M 5%	1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R561	1-216-663-11	METAL CHIP 3.3K 0.50%	1/10W
R562	1-216-031-00	METAL GLAZE 180 5%	1/10W
R563	1-216-031-00	METAL GLAZE 180 5%	1/10W
R564	1-216-031-00	METAL GLAZE 180 5%	1/10W

REF.NO.	PART NO.	DESCRIPTION	REMARK
R565	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-28WS3B)
R566	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-28WS3B)
R567	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R568	1-216-073-00	METAL GLAZE 10K 5%	1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R571	1-216-017-91	METAL GLAZE 47 5%	1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R575	1-216-033-00	METAL GLAZE 220 5%	1/10W (KV-28WS3B)
R577	1-216-295-91	METAL GLAZE 0 5%	1/10W (KV-28WS3B)
R579	1-216-631-11	METAL CHIP 150 0.50%	1/10W (KV-28WS3B)
R580	1-216-295-91	METAL GLAZE 0 5%	1/10W
R582	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R583	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R1301	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R1302	1-216-025-91	METAL GLAZE 100 5%	1/10W
R1303	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R1304	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R1305	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R1306	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
R1307	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R1308	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R1310	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R1311	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R1312	1-216-651-11	METAL CHIP 1K 0.50%	1/10W
R1313	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R1314	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R1315	1-208-767-11	METAL CHIP 240 0.50%	1/10W
R1316	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R1317	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R1318	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R1319	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R1320	1-216-648-11	METAL CHIP 750 0.50%	1/10W
R1321	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R1322	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R1323	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R1324	1-216-651-11	METAL CHIP 1K 0.50%	1/10W
R1325	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R1326	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R1327	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R1328	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R1329	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R1330	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R1331	1-216-650-11	METAL CHIP 910 0.50%	1/10W
R1332	1-216-626-11	METAL CHIP 91 0.50%	1/10W
R1366	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W
R1367	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R1368	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R1369	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R1370	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R1371	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R1372	1-216-105-91	METAL GLAZE 220K 5%	1/10W
R1373	1-216-097-91	METAL GLAZE 100K 5%	1/10W
R1374	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R1375	1-216-049-91	METAL GLAZE 1K 5%	1/10W

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REF.NO.	PART NO.	DESCRIPTION	REMARK
R1376	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1377	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3701	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3702	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R3703	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R3704	1-216-619-11	METAL CHIP 47 0.50% 1/10W	
R3705	1-216-619-11	METAL CHIP 47 0.50% 1/10W	
R3706	1-216-619-11	METAL CHIP 47 0.50% 1/10W	
R3707	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3708	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3709	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R3710	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R3711	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3712	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3713	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R3714	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R3715	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R3716	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R3717	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3718	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3719	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R3720	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3722	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3723	1-216-041-00	METAL GLAZE 470 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
	1-216-049-91	METAL GLAZE 1K 5% 1/10W (KV-28WS3B)	
R3724	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3725	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R3726	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R3727	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R3729	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3730	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R3731	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3732	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3734	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R3735	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3736	1-216-089-91	METAL GLAZE 47K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3737	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3738	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3739	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3740	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3741	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R3742	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R3743	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R3745	1-216-033-00	METAL GLAZE 220 5% 1/10W (KV-28WS3B)	
R3746	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3748	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3749	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R3750	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R3753	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3754	1-216-081-00	METAL GLAZE 22K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3755	1-216-079-00	METAL GLAZE 18K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3756	1-216-025-91	METAL GLAZE 100 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3757	1-216-073-00	METAL GLAZE 10K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R3758	1-216-025-91	METAL GLAZE 100 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3759	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3760	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R3761	1-216-079-00	METAL GLAZE 18K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3762	1-216-097-91	METAL GLAZE 100K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3763	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3768	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3769	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3770	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R3771	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3772	1-216-037-00	METAL GLAZE 330 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3773	1-216-037-00	METAL GLAZE 330 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3774	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3775	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3776	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3777	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3778	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3B)	
R3779	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3B)	
R3780	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3B)	
R3781	1-216-033-00	METAL GLAZE 220 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3782	1-216-065-91	METAL GLAZE 4.7K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R3783	1-216-059-91	METAL GLAZE 2.7K 5% 1/10W	

## &lt; CRYSTAL &gt;

X301	1-760-957-91	VIBRATOR, CRYSTAL (17.8MHz)	
X302	1-527-722-00	OSCILLATOR, CRYSTAL (14.3MHz)	
X3700	1-567-504-11	OSCILLATOR, CRYSTAL (4.43MHz) (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
X3701	1-567-505-11	OSCILLATOR, CRYSTAL (3.58MHz) (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	

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\*A-1620-068-A B2 BOARD, COMPLETE (KV-28WS3B)  
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## &lt; CAPACITOR &gt;

C9001	1-104-665-11	ELECT 100MF 20% 25V	
C9002	1-163-038-91	CERAMIC CHIP 0.1MF 25V	
C9003	1-163-038-91	CERAMIC CHIP 0.1MF 25V	
C9004	1-164-337-11	CERAMIC CHIP 2.2MF 16V	
C9005	1-163-038-91	CERAMIC CHIP 0.1MF 25V	
C9006	1-163-096-00	CERAMIC CHIP 13PF 5% 50V	
C9007	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
C9008	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C9009	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C9010	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C9013	1-164-222-11	CERAMIC CHIP 0.22MF 25V	
C9014	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C9015	1-126-964-11	ELECT 10MF 20% 50V	
C9016	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C9017	1-163-989-11	CERAMIC CHIP 0.033MF 10% 25V	

The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

KV-28WS3

B2

F1

REF.NO.	PART NO.	DESCRIPTION	REMARK		
C9018	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V	
C9019	1-163-133-00	CERAMIC CHIP 470PF	5%	50V	
C9020	1-104-665-11	ELECT 100MF	20%	25V	
C9021	1-164-182-11	CERAMIC CHIP 0.0033MF	10%	50V	
C9022	1-163-121-00	CERAMIC CHIP 150PF	5%	50V	
C9023	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V	
C9024	1-164-182-11	CERAMIC CHIP 0.0033MF	10%	50V	
C9025	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C9026	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C9027	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V	
C9028	1-124-925-11	ELECT 2.2MF	20%	50V	
< CONNECTOR >					
CN9001	1-695-300-11	CONNECTOR, BOARD TO BOARD 20P			
< DIODE >					
D9002	8-719-914-43	DIODE DAN202K			
D9003	8-719-401-92	DIODE MA3082M-TX			
< IC >					
IC9001	8-759-343-40	IC TDA9145/N3D			
IC9002	8-759-360-44	IC TEA2130			
< TRANSISTOR >					
Q9001	8-729-920-74	TRANSISTOR 2SC2412K-QR			
Q9002	8-729-920-74	TRANSISTOR 2SC2412K-QR			
Q9003	8-729-920-74	TRANSISTOR 2SC2412K-QR			
Q9004	8-729-901-04	TRANSISTOR DTA114EK			
Q9005	8-729-216-22	TRANSISTOR 2SA1162-G			
Q9006	8-729-901-04	TRANSISTOR DTA114EK			
Q9007	8-729-920-74	TRANSISTOR 2SC2412K-QR			
Q9008	8-729-920-74	TRANSISTOR 2SC2412K-QR			
< RESISTOR >					
JR9001	1-216-296-91	METAL GLAZE 0 5%	1/8W		
JR9002	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9003	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9004	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9005	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9006	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9007	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9008	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9009	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9010	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9011	1-216-296-91	METAL GLAZE 0 5%	1/8W		
JR9012	1-216-296-91	METAL GLAZE 0 5%	1/8W		
JR9013	1-216-296-91	METAL GLAZE 0 5%	1/8W		
JR9014	1-216-296-91	METAL GLAZE 0 5%	1/8W		
JR9015	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9016	1-216-295-91	METAL GLAZE 0 5%	1/10W		
JR9017	1-216-295-91	METAL GLAZE 0 5%	1/10W		
R9001	1-216-025-91	METAL GLAZE 100 5%	1/10W		
R9002	1-216-033-00	METAL GLAZE 220 5%	1/10W		
R9003	1-216-033-00	METAL GLAZE 220 5%	1/10W		
R9004	1-216-097-91	METAL GLAZE 100K 5%	1/10W		
R9005	1-216-025-91	METAL GLAZE 100 5%	1/10W		
R9006	1-216-025-91	METAL GLAZE 100 5%	1/10W		
R9007	1-216-049-91	METAL GLAZE 1K 5%	1/10W		
R9008	1-216-041-00	METAL GLAZE 470 5%	1/10W		

REF.NO.	PART NO.	DESCRIPTION	REMARK		
R9009	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W		
R9010	1-216-262-00	METAL GLAZE 470K 5%	1/8W		
R9011	1-216-097-91	METAL GLAZE 100K 5%	1/10W		
R9012	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W		
R9013	1-216-208-00	METAL GLAZE 2.7K 5%	1/8W		
R9014	1-216-214-00	METAL GLAZE 4.7K 5%	1/8W		
R9015	1-216-073-00	METAL GLAZE 10K 5%	1/10W		
R9016	1-216-663-11	METAL CHIP 3.3K 0.50%	1/10W		
R9017	1-216-113-00	METAL GLAZE 470K 5%	1/10W		
R9018	1-216-049-91	METAL GLAZE 1K 5%	1/10W		
R9019	1-216-073-00	METAL GLAZE 10K 5%	1/10W		
R9020	1-216-085-00	METAL GLAZE 33K 5%	1/10W		
R9021	1-216-049-91	METAL GLAZE 1K 5%	1/10W		
R9022	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W		
R9023	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W		
R9024	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W		
R9025	1-216-075-00	METAL GLAZE 12K 5%	1/10W		
R9026	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W		
R9027	1-216-105-91	METAL GLAZE 220K 5%	1/10W		
R9028	1-216-041-00	METAL GLAZE 470 5%	1/10W		
R9029	1-216-089-91	METAL GLAZE 47K 5%	1/10W		
R9030	1-216-063-91	METAL GLAZE 3.9K 5%	1/10W		
R9031	1-216-025-91	METAL GLAZE 100 5%	1/10W		
R9032	1-216-049-91	METAL GLAZE 1K 5%	1/10W		
R9033	1-216-073-00	METAL GLAZE 10K 5%	1/10W		
R9034	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W		
R9035	1-249-403-11	CARBON 68 5%	1/4W F		
R9036	1-216-037-00	METAL GLAZE 330 5%	1/10W		
R9037	1-216-037-00	METAL GLAZE 330 5%	1/10W		
R9038	1-216-073-00	METAL GLAZE 10K 5%	1/10W		
R9039	1-216-073-00	METAL GLAZE 10K 5%	1/10W		
R9040	1-216-073-00	METAL GLAZE 10K 5%	1/10W		
< CRYSTAL >					
X9001	1-567-504-11	OSCILLATOR, CRYSTAL (4.43MHz)			
X9002	1-567-505-11	OSCILLATOR, CRYSTAL (3.58MHz)			
X9003	1-567-888-11	OSCILLATOR, CERAMIC (500KHz)			

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\*A-1624-052-A F1 BOARD, COMPLETE  
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< CONNECTOR >

CN0007  $\Delta$  \*1-580-844-11 PIN, CONNECTOR (POWER)  
CN0622  $\Delta$  \*1-695-292-11 PIN, CONNECTOR (POWER)

< FUSE >

F651  $\Delta$  1-576-232-21 FUSE (H.B.C.) (5A 250V)  
1-533-230-11 HOLDER, FUSE; F651

< SWITCH >

S651  $\Delta$  1-571-433-21 SWITCH, PUSH (AC POWER)



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
*A-1626-004-A Q BOARD, COMPLETE (KV-28WS3A/28WS3D/ ***** 28WS3E/28WS3K/ 28WS3U)				C3572	1-165-319-11	CERAMIC CHIP 0.1MF	50V
< CAPACITOR >				C3573	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3501	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C3574	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3504	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C3575	1-126-964-11	ELECT 10MF	20% 50V
C3505	1-164-326-91	CERAMIC CHIP 0.47MF	10% 25V	C3577	1-126-964-11	ELECT 10MF	20% 50V
C3507	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3578	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3508	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C3579	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3509	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C3580	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3510	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C3581	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3511	1-124-903-11	ELECT 1MF	20% 50V	C3582	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3515	1-126-964-11	ELECT 10MF	20% 50V	C3583	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3517	1-163-099-00	CERAMIC CHIP 18PF	5% 50V	C3584	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3519	1-126-964-11	ELECT 10MF	20% 50V	C3585	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3521	1-126-964-11	ELECT 10MF	20% 50V	C3586	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3522	1-126-964-11	ELECT 10MF	20% 50V	C3587	1-126-964-11	ELECT 10MF	20% 50V
C3523	1-126-964-11	ELECT 10MF	20% 50V	C3588	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3524	1-126-964-11	ELECT 10MF	20% 50V	C3589	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3525	1-104-664-11	ELECT 47MF	20% 25V	C3590	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3526	1-104-664-11	ELECT 47MF	20% 25V	C3591	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3527	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3592	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3528	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3593	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3529	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3594	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3530	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3595	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3531	1-163-099-00	CERAMIC CHIP 18PF	5% 50V	C3596	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3533	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3597	1-126-964-11	ELECT 10MF	20% 50V
C3534	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3598	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3535	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C3599	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3536	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3602	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3537	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3603	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3538	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3604	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3539	1-126-964-11	ELECT 10MF	20% 50V	C3605	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3540	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3608	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3541	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3609	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3542	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3610	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3543	1-126-964-11	ELECT 10MF	20% 50V	C3614	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3544	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C3615	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3545	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	C3616	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3546	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	C3617	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3547	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3618	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3549	1-126-964-11	ELECT 10MF	20% 50V	C3619	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3550	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3620	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3552	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3621	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3553	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3622	1-126-964-11	ELECT 10MF	20% 50V
C3554	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3623	1-126-964-11	ELECT 10MF	20% 50V
C3555	1-126-964-11	ELECT 10MF	20% 50V	C3624	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3556	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3625	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3557	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3626	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3558	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3628	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3559	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3629	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3560	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3631	1-126-964-11	ELECT 10MF	20% 50V
C3562	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3632	1-126-964-11	ELECT 10MF	20% 50V
C3563	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3633	1-126-964-11	ELECT 10MF	20% 50V
C3565	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3634	1-126-964-11	ELECT 10MF	20% 50V
C3568	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3635	1-126-964-11	ELECT 10MF	20% 50V
C3569	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3637	1-126-964-11	ELECT 10MF	20% 50V
C3570	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3640	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C3571	1-165-319-11	CERAMIC CHIP 0.1MF	50V	C3641	1-104-664-11	ELECT 47MF	20% 25V
< CONNECTOR >				< CONNECTOR >			
				CN3502	1-695-300-11	CONNECTOR, BOARD TO BOARD 20P	



REMARK

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN3503	1-695-513-21	SOCKET, CONNECTOR 30P	
	< FERRITE BEAD >		
FB3501	1-414-234-11	INDUCTOR, FERRITE BEAD	
FB3502	1-414-234-11	INDUCTOR, FERRITE BEAD	
FB3550	1-414-234-11	INDUCTOR, FERRITE BEAD	
	< ENCAPSULATED FILTER >		
FL3502	1-233-436-21	FILTER, LOW PASS	
FL3503	1-233-435-11	FILTER, LOW PASS	
FL3504	1-236-071-11	ENCAPSULATED COMPONENT	
FL3505	1-236-071-11	ENCAPSULATED COMPONENT	
FL3506	1-236-071-11	ENCAPSULATED COMPONENT	
FL3507	1-236-071-11	ENCAPSULATED COMPONENT	
FL3509	1-236-071-11	ENCAPSULATED COMPONENT	
FL3512	1-236-071-11	ENCAPSULATED COMPONENT	
FL3513	1-236-071-11	ENCAPSULATED COMPONENT	
FL3514	1-236-071-11	ENCAPSULATED COMPONENT	
FL3515	1-236-071-11	ENCAPSULATED COMPONENT	
FL3516	1-236-071-11	ENCAPSULATED COMPONENT	
	< IC >		
IC3501	8-759-350-07	IC SDA9205-2GEG	
IC3503	8-759-366-14	IC CY7C291A-35JC-AR302	
IC3504	8-759-033-02	IC MC74F04M	
IC3506	8-759-034-75	IC MC74F157AM-T2	
IC3507	8-759-034-75	IC MC74F157AM-T2	
IC3508	8-759-034-75	IC MC74F157AM-T2	
IC3509	8-759-034-75	IC MC74F157AM-T2	
IC3510	8-759-034-75	IC MC74F157AM-T2	
IC3511	8-759-351-57	IC TMC57110-D77527PB	
IC3512	8-759-358-55	IC P83C652FBA/526	
IC3513	8-759-351-56	IC TMC57120-D77523PJ	
IC3514	8-759-297-80	IC MSN514222B-30GS-KR1	
IC3515	8-759-297-80	IC MSN514222B-30GS-KR1	
IC3516	8-759-350-05	IC MSN548333TS-K	
IC3517	8-759-350-05	IC MSN548333TS-K	
IC3520	8-759-355-73	IC EPM7032LC44-15-AE301	
IC3521	8-759-233-64	IC TC74HCU04AF	
IC3525	8-759-503-65	IC SN74BCT245NS-T5R	
IC3526	8-759-503-65	IC SN74BCT245NS-T5R	
IC3527	8-759-503-65	IC SN74BCT245NS-T5R	
IC3528	8-759-034-75	IC MC74F157AM-T2	
	< COIL >		
L3501	1-408-409-00	INDUCTOR 10UH	
L3502	1-410-209-51	INDUCTOR CHIP 27UH	
L3503	1-408-409-00	INDUCTOR 10UH	
L3504	1-408-401-00	INDUCTOR 2.2UH	
L3505	1-408-401-00	INDUCTOR 2.2UH	
L3506	1-408-401-00	INDUCTOR 2.2UH	
L3507	1-408-401-00	INDUCTOR 2.2UH	
L3508	1-410-213-51	INDUCTOR CHIP 56UH	
L3509	1-408-401-00	INDUCTOR 2.2UH	
L3510	1-408-401-00	INDUCTOR 2.2UH	
L3511	1-408-401-00	INDUCTOR 2.2UH	
	< TRANSISTOR >		
Q3501	8-729-920-74	TRANSISTOR 2SC2412K-QR	

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q3502	8-729-216-22	TRANSISTOR 2SA1162-G	
Q3503	8-729-216-22	TRANSISTOR 2SA1162-G	
Q3504	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q3505	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q3506	8-729-216-22	TRANSISTOR 2SA1162-G	
Q3507	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q3512	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q3513	8-729-216-22	TRANSISTOR 2SA1162-G	
	< RESISTOR >		
JR3501	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R3501	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
R3502	1-216-666-11	METAL CHIP 4.3K 0.50% 1/10W	
R3503	1-216-631-11	METAL CHIP 150 0.50% 1/10W	
R3504	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3506	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R3508	1-216-603-11	METAL CHIP 10 0.50% 1/10W	
R3512	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3513	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3516	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R3517	1-216-645-11	METAL CHIP 560 0.50% 1/10W	
R3518	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	
R3519	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R3522	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R3523	1-216-645-11	METAL CHIP 560 0.50% 1/10W	
R3524	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	
R3525	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R3528	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R3529	1-216-645-11	METAL CHIP 560 0.50% 1/10W	
R3530	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R3531	1-208-800-11	METAL CHIP 5.6K 0.50% 1/10W	
R3535	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3536	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R3537	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R3538	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R3539	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R3542	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R3544	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3545	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3546	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3547	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3548	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3549	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3550	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3551	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3552	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3553	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3554	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3555	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R3556	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R3557	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R3558	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R3559	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R3560	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R3561	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R3562	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R3563	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R3564	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R3565	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R3566	1-216-017-91	METAL GLAZE 47 5% 1/10W	

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A1

REF.NO.	PART NO.	DESCRIPTION	REMARK
R3567	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3568	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3569	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3570	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3571	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3572	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3573	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3574	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3575	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3577	1-216-295-91	METAL GLAZE 0 5%	1/10W
R3579	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R3580	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R3582	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R3583	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R3584	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3585	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3586	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3587	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3588	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3589	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3590	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3591	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3592	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3593	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3594	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3595	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3596	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3597	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3598	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3599	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3600	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3601	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R3602	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3603	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3604	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3605	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3606	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3607	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3608	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3609	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3610	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3611	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3612	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3613	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3614	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3615	1-216-043-91	METAL GLAZE 560 5%	1/10W
R3616	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R3617	1-216-025-91	METAL GLAZE 100 5%	1/10W
R3618	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3619	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3620	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3621	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3622	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3623	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3625	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3626	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3627	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3628	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3629	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3630	1-216-001-00	METAL GLAZE 10 5%	1/10W

REF.NO.	PART NO.	DESCRIPTION	REMARK
R3631	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3632	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3633	1-216-025-91	METAL GLAZE 100 5%	1/10W
R3634	1-216-025-91	METAL GLAZE 100 5%	1/10W
R3637	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3638	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3639	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3640	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3641	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3642	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3643	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3644	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3646	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3647	1-216-001-00	METAL GLAZE 10 5%	1/10W
R3649	1-216-295-91	METAL GLAZE 0 5%	1/10W
R3650	1-216-295-91	METAL GLAZE 0 5%	1/10W
R3651	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R3652	1-216-041-00	METAL GLAZE 470 5%	1/10W
R3661	1-216-025-91	METAL GLAZE 100 5%	1/10W
R3663	1-216-295-91	METAL GLAZE 0 5%	1/10W
R3664	1-216-295-91	METAL GLAZE 0 5%	1/10W
R3672	1-216-660-11	METAL CHIP 2.4K 0.50%	1/10W
R3673	1-216-660-11	METAL CHIP 2.4K 0.50%	1/10W
R3674	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3675	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3676	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3677	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3678	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3679	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3680	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3681	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3682	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3683	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3684	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3685	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3686	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3687	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3688	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3689	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3690	1-216-631-11	METAL CHIP 150 0.50%	1/10W
R3698	1-216-295-91	METAL GLAZE 0 5%	1/10W
R3700	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3701	1-216-033-00	METAL GLAZE 220 5%	1/10W
R3702	1-216-017-91	METAL GLAZE 47 5%	1/10W
R3703	1-216-043-91	METAL GLAZE 560 5%	1/10W

## &lt; CRYSTAL &gt;

X3502 1-578-774-11 VIBRATOR, CRYSTAL (12MHz)

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\*A-1630-368-A A1 BOARD, COMPLETE

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## &lt; CAPACITOR &gt;

C1236	1-164-348-11	CERAMIC CHIP 0.12MF	10%	25V
C1237	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1238	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C1239	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C1240	1-163-022-00	CERAMIC CHIP 0.012MF	10%	50V

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C1241	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C3245	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V
C1242	1-163-014-00	CERAMIC CHIP 0.0027MF	5% 50V	C3246	1-126-964-11	ELECT 10MF	20% 50V
C1243	1-163-014-00	CERAMIC CHIP 0.0027MF	5% 50V	C3247	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V
C1244	1-163-010-11	CERAMIC CHIP 0.0012MF	10% 50V	C3248	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V
C1245	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C3249	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C1246	1-126-965-11	ELECT 22MF	20% 50V	C3250	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V
C1247	1-126-933-11	ELECT 100MF	20% 16V	C3251	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V
C1248	1-164-348-11	CERAMIC CHIP 0.12MF	10% 25V	C3252	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C1249	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C3253	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V
C1250	1-163-986-00	CERAMIC CHIP 0.027MF	10% 25V	C3254	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V
C1251	1-163-986-00	CERAMIC CHIP 0.027MF	10% 25V	C3255	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C1252	1-163-022-00	CERAMIC CHIP 0.012MF	10% 50V	C3256	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C1253	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C3257	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C1254	1-163-014-00	CERAMIC CHIP 0.0027MF	5% 50V	C3258	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C1255	1-163-014-00	CERAMIC CHIP 0.0027MF	5% 50V	C3259	1-126-933-11	ELECT 100MF	20% 16V
C1256	1-163-010-11	CERAMIC CHIP 0.0012MF	10% 50V	C3260	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C1257	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C3265	1-136-157-00	FILM 0.022MF	5% 50V
C1264	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C3266	1-136-161-00	FILM 0.047MF	5% 50V
C3201	1-124-925-11	ELECT 2.2MF	20% 50V	C3267	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C3202	1-126-934-11	ELECT 220MF	20% 16V	C3268	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C3203	1-107-682-11	CERAMIC CHIP 1MF	10% 16V	C3269	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V
C3204	1-126-964-11	ELECT 10MF	20% 50V	C3270	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V
C3205	1-126-964-11	ELECT 10MF	20% 50V	< CONNECTOR >			
C3206	1-126-964-11	ELECT 10MF	20% 50V	CN1101	1-695-300-11	CONNECTOR, BOARD TO BOARD 20P	
C3207	1-126-964-11	ELECT 10MF	20% 50V	< FERRITE BEAD >			
C3208	1-107-682-11	CERAMIC CHIP 1MF	10% 16V	FB1104	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
C3209	1-136-159-00	FILM 0.033MF	5% 50V	< IC >			
C3210	1-136-480-11	FILM 0.0015MF	5% 100V	IC1205	8-759-257-64	IC TDA7317	
C3211	1-136-159-00	FILM 0.033MF	5% 50V	IC3201	8-759-248-74	IC LA2785	
C3212	1-126-934-11	ELECT 220MF	20% 16V	IC3202	8-759-341-23	IC LV1011	
C3215	1-126-934-11	ELECT 220MF	20% 16V	IC3203	8-759-266-65	IC TDA6622-5	
C3216	1-126-964-11	ELECT 10MF	20% 50V	< COIL >			
C3217	1-126-964-11	ELECT 10MF	20% 50V	L1203	1-408-419-00	INDUCTOR 68UH	
C3218	1-126-964-11	ELECT 10MF	20% 50V	L3201	1-408-419-00	INDUCTOR 68UH	
C3219	1-126-964-11	ELECT 10MF	20% 50V	L3202	1-408-419-00	INDUCTOR 68UH	
C3220	1-126-934-11	ELECT 220MF	20% 16V	< TRANSISTOR >			
C3221	1-107-682-11	CERAMIC CHIP 1MF	10% 16V	Q1203	8-729-901-01	TRANSISTOR DTC144EX	
C3222	1-107-682-11	CERAMIC CHIP 1MF	10% 16V	Q1204	8-729-901-01	TRANSISTOR DTC144EX	
C3223	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	< RESISTOR >			
C3224	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	JR3201	1-216-295-91	METAL GLAZE 0 5% 1/10W	
C3225	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V	JR3202	1-216-295-91	METAL GLAZE 0 5% 1/10W	
C3226	1-131-351-00	TANTALUM 4.7MF	10% 35V	R1131	1-216-041-00	METAL GLAZE 470 5% 1/10W	
C3227	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V	R1132	1-216-041-00	METAL GLAZE 470 5% 1/10W	
C3228	1-131-351-00	TANTALUM 4.7MF	10% 35V	R1246	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C3229	1-164-492-11	CERAMIC CHIP 0.15MF	10% 16V	R1247	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
C3230	1-131-350-00	TANTALUM 3.3MF	10% 35V	R1248	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C3231	1-164-492-11	CERAMIC CHIP 0.15MF	10% 16V	R1249	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
C3232	1-164-492-11	CERAMIC CHIP 0.15MF	10% 16V	R1250	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C3233	1-131-350-00	TANTALUM 3.3MF	10% 35V	R1251	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
C3234	1-164-492-11	CERAMIC CHIP 0.15MF	10% 16V	R1252	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C3235	1-131-351-00	TANTALUM 4.7MF	10% 35V	R1253	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
C3236	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V	R1254	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C3237	1-131-351-00	TANTALUM 4.7MF	10% 35V	R1255	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
C3238	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V				
C3239	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V				
C3240	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V				
C3241	1-126-967-11	ELECT 47MF	20% 16V				
C3242	1-137-189-91	FILM 0.18MF	5% 50V				
C3243	1-126-964-11	ELECT 10MF	20% 50V				
C3244	1-163-137-00	CERAMIC CHIP 680PF	5% 50V				

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REF.NO.	PART NO.	DESCRIPTION	REMARK
R1256	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1257	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R1258	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1259	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1260	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1261	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1262	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1263	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1264	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1265	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1266	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R1267	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1268	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1269	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1270	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R1271	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R3201	1-216-689-11	METAL GLAZE 39K 5% 1/10W	
R3202	1-216-228-00	METAL GLAZE 18K 5% 1/8W	
R3204	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3205	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3206	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R3207	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R3208	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3209	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R3210	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R3211	1-208-854-11	METAL CHIP 1M 0.50% 1/10W	

## &lt; CRYSTAL &gt;

X3201 1-579-125-11 VIBRATOR, CERAMIC

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\*A-1632-296-A A BOARD, COMPLETE (KV-28WS3A/28WS3D)

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\*A-1632-337-A A BOARD, COMPLETE (KV-28WS3B)

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\*A-1632-339-A A BOARD, COMPLETE (KV-28WS3E)

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\*A-1632-340-A A BOARD, COMPLETE (KV-28WS3K)

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\*A-1632-336-A A BOARD, COMPLETE (KV-28WS3U)

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4-201-023-01 SPACER, INSULATING

4-202-373-01 SPRING, IC

4-382-854-11 SCREW (M3X10), P, SW (+)

## &lt; CAPACITOR &gt;

C001	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C002	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C004	1-164-222-11	CERAMIC CHIP 0.22MF 25V	
C007	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C008	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C009	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C010	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C012	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C014	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C016	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
C017	1-164-222-11	CERAMIC CHIP 0.22MF 25V	
C018	1-124-925-11	ELECT 2.2MF 20% 50V	
C019	1-126-965-11	ELECT 22MF 20% 50V	
C020	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C022	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	

REF.NO.	PART NO.	DESCRIPTION	REMARK
C023	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C024	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C025	1-164-222-11	CERAMIC CHIP 0.22MF 25V	
C026	1-164-222-11	CERAMIC CHIP 0.22MF 25V	
C027	1-164-346-11	CERAMIC CHIP 1MF 16V	
C028	1-126-964-11	ELECT 10MF 20% 50V	
C032	1-163-185-00	CERAMIC CHIP 150PF 5% 50V	
C042	1-164-346-11	CERAMIC CHIP 1MF 16V	
C072	1-126-934-11	ELECT 220MF 20% 16V	
C081	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	
C103	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C104	1-126-934-11	ELECT 220MF 20% 16V	
C105	1-126-965-11	ELECT 22MF 20% 50V	
C106	1-124-927-11	ELECT 4.7MF 20% 50V	
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
	1-126-933-11	ELECT 100MF 20% 16V	
		(KV-28WS3B)	
C107	1-126-934-11	ELECT 220MF 20% 16V	
C120	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
C201	1-163-078-11	CERAMIC CHIP 0.033MF 10% 25V	
C202	1-163-078-11	CERAMIC CHIP 0.033MF 10% 25V	
C203	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C204	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C205	1-126-964-11	ELECT 10MF 20% 50V	
C206	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V	
		(KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C207	1-137-613-11	FILM 0.0018MF 2% 100V	
		(KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C208	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C209	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C210	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C211	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C212	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C213	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C214	1-126-967-11	ELECT 47MF 20% 50V	
C215	1-126-967-11	ELECT 47MF 20% 50V	
C218	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C219	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C220	1-124-925-11	ELECT 2.2MF 20% 50V	
C221	1-124-925-11	ELECT 2.2MF 20% 50V	
C222	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C223	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C224	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C225	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C226	1-163-011-11	CERAMIC CHIP 0.0015MF 10% 50V	
C227	1-163-011-11	CERAMIC CHIP 0.0015MF 10% 50V	
C228	1-124-925-11	ELECT 2.2MF 20% 50V	
C229	1-124-925-11	ELECT 2.2MF 20% 50V	
C230	1-136-177-00	FILM 1MF 5% 50V	
		(KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C231	1-136-177-00	FILM 1MF 5% 50V	
		(KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C232	1-164-182-11	CERAMIC CHIP 0.0033MF 10% 50V	
		(KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C233	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
		(KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C234	1-126-964-11	ELECT 10MF 20% 50V	
C235	1-126-964-11	ELECT 10MF 20% 50V	
C236	1-126-933-11	ELECT 100MF 20% 16V	
C237	1-104-665-11	ELECT 100MF 20% 25V	

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C238	1-136-165-00	FILM 0.1MF 5%	50V	C582	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C239	1-136-165-00	FILM 0.1MF 5%	50V	C585	1-126-967-11	ELECT 47MF	20% 16V
C240	1-104-665-11	ELECT 100MF	20% 25V	C586	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C242	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C587	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C243	1-126-967-11	ELECT 47MF	20% 16V	C588	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C248	1-163-185-00	CERAMIC CHIP 150PF	5% 50V	C589	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C251	1-136-165-00	FILM 0.1MF 5%	50V	C590	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C252	1-136-165-00	FILM 0.1MF 5%	50V	C591	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C253	1-126-967-11	ELECT 47MF	20% 16V	C592	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C256	1-126-967-11	ELECT 47MF	20% 16V	C593	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C258	1-126-934-11	ELECT 220MF	20% 16V	C594	1-126-967-11	ELECT 47MF	20% 50V
C259	1-107-714-11	ELECT 10MF	20% 16V	C681	1-104-664-11	ELECT 47MF	20% 25V
C260	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V	C682	1-126-967-11	ELECT 47MF	20% 16V
C261	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V	C683	1-104-664-11	ELECT 47MF	20% 25V
C262	1-126-967-11	ELECT 47MF	20% 16V	C684	1-104-664-11	ELECT 47MF	20% 25V
C263	1-126-967-11	ELECT 47MF	20% 16V	C685	1-126-967-11	ELECT 47MF	20% 16V
C264	1-136-165-00	FILM 0.1MF 5%	50V	C686	1-126-967-11	ELECT 47MF	20% 16V
C265	1-136-165-00	FILM 0.1MF 5%	50V	C687	1-126-967-11	ELECT 47MF	20% 16V
C266	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C688	1-126-967-11	ELECT 47MF	20% 16V
C267	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C689	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C268	1-136-165-00	FILM 0.1MF 5%	50V	C690	1-126-967-11	ELECT 47MF	20% 16V
C269	1-136-165-00	FILM 0.1MF 5%	50V	C691	1-126-967-11	ELECT 47MF	20% 16V
C270	1-126-953-11	ELECT 2200MF	20% 35V	C692	1-126-967-11	ELECT 47MF	20% 16V
C271	1-126-953-11	ELECT 2200MF	20% 35V	C693	1-126-967-11	ELECT 47MF	20% 16V
C272	1-126-953-11	ELECT 2200MF	20% 35V	C1007	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C273	1-126-953-11	ELECT 2200MF	20% 35V	C1008	1-126-967-11	ELECT 47MF	20% 16V
C274	1-136-165-00	FILM 0.1MF 5%	50V	< C1101 - C1132 FITTED ON >			
C275	1-136-165-00	FILM 0.1MF 5%	50V	< KV-28WS3B/28WS3E/28WS3U >			
C280	1-126-967-11	ELECT 47MF	20% 16V	C1101	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C281	1-126-940-11	ELECT 330MF	20% 16V	C1102	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
C283	1-164-489-91	CERAMIC CHIP 0.22MF	10% 16V	C1103	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C284	1-164-489-91	CERAMIC CHIP 0.22MF	10% 16V	C1104	1-126-964-11	ELECT 10MF	20% 50V
C285	1-164-489-91	CERAMIC CHIP 0.22MF	10% 16V	C1105	1-126-964-11	ELECT 10MF	20% 50V
C351	1-126-964-11	ELECT 10MF	20% 50V	C1106	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C352	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C1107	1-126-967-11	ELECT 47MF	20% 16V
C355	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C1108	1-126-964-11	ELECT 10MF	20% 50V
C356	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C1110	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C357	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C1111	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C358	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C1112	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C359	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C1113	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C360	1-164-326-91	CERAMIC CHIP 0.47MF	16V	C1114	1-126-967-11	ELECT 47MF	20% 16V
		(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3R/28WS3U)		C1115	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C1116	1-126-967-11	ELECT 47MF	20% 16V
		(KV-28WS3B)		C1117	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C361	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C1118	1-126-967-11	ELECT 47MF	20% 16V
C362	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C1119	1-126-967-11	ELECT 47MF	20% 16V
C364	1-126-964-11	ELECT 10MF	20% 50V	C1120	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C365	1-124-903-11	ELECT 1MF	20% 50V	C1121	1-164-299-11	CERAMIC CHIP 0.22MF	10% 25V
C366	1-164-005-11	CERAMIC CHIP 0.47MF	25V	C1122	1-126-967-11	ELECT 47MF	20% 16V
C367	1-164-005-11	CERAMIC CHIP 0.47MF	25V	C1123	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C368	1-164-005-11	CERAMIC CHIP 0.47MF	25V	C1124	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C369	1-124-903-11	ELECT 1MF	20% 50V	C1125	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V
C370	1-164-005-11	CERAMIC CHIP 0.47MF	25V	C1126	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C372	1-126-964-11	ELECT 10MF	20% 50V	C1127	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C373	1-126-964-11	ELECT 10MF	20% 50V	C1128	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C374	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C1129	1-162-568-11	CERAMIC CHIP 0.33MF	25V
C580	1-126-964-11	ELECT 10MF	20% 50V	C1130	1-124-903-11	ELECT 1MF	20% 50V
C581	1-124-902-00	ELECT 0.47MF	20% 50V	C1131	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
				C1132	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
< C1137 - C1157 FITTED ON >				C1560	1-124-902-00	ELECT 0.47MF	20% 50V
< KV-28WS3B/28WS3E/28WS3U >				C1561	1-104-760-11	CERAMIC CHIP 0.047MF	10% 50V
C1133	1-126-967-11	ELECT 47MF	20% 16V	C1562	1-163-117-91	CERAMIC CHIP 100P	5% 50V
C1134	1-126-964-11	ELECT 10MF	20% 50V	C1563	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C1135	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	C1564	1-164-336-11	CERAMIC CHIP 0.33MF	25V
C1136	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C1567	1-124-903-11	ELECT 1MF	20% 50V
C1137	1-163-095-00	CERAMIC CHIP 12PF	5% 50V	C1568	1-164-344-11	CERAMIC CHIP 0.068MF	10% 25V
C1139	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C1569	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
C1142	1-164-299-11	CERAMIC CHIP 0.22MF	10% 25V	C1570	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C1143	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C1571	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1147	1-126-967-11	ELECT 47MF	20% 16V	C1585	1-124-903-11	ELECT 1MF	20% 50V
C1148	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C1586	1-124-902-00	ELECT 0.47MF	20% 50V
C1150	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C1587	1-126-967-11	ELECT 47MF	20% 50V
C1151	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C1588	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C1152	1-126-967-11	ELECT 47MF	20% 16V	C1589	1-162-587-11	CERAMIC CHIP 0.039MF	10% 25V
C1157	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C1590	1-164-346-11	CERAMIC CHIP 1MF	16V
C1501	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C1591	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C1502	1-124-903-11	ELECT 1MF	20% 50V	C1593	1-126-964-11	ELECT 10MF	20% 50V
C1504	1-124-122-11	ELECT 100MF	20% 50V	C2001	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C1505	1-137-371-11	FILM 0.015MF	5% 50V	C2002	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C1506	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C2003	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C1507	1-106-383-00	MYLAR 0.047MF	10% 100V	C2004	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C1508	1-137-423-11	MYLAR 0.15MF	10% 100V	C2005	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C1509	1-126-964-11	ELECT 10MF	20% 50V	C2007	1-126-965-11	ELECT 22MF	20% 50V
C1510	1-130-789-00	FILM 1MF	5% 100V	C2008	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C1511	1-126-941-11	ELECT 470MF	20% 25V	C2010	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C1512	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C2011	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V
C1513	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C2012	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1514	1-126-941-11	ELECT 470MF	20% 25V	C2013	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1518	1-124-927-11	ELECT 4.7MF	20% 50V	C2014	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C1520	1-126-964-11	ELECT 10MF	20% 50V	C2016	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C1521	1-107-698-11	ELECT 10MF	20% 25V	C2017	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C1522	1-126-967-11	ELECT 47MF	20% 50V	C2019	1-126-965-11	ELECT 22MF	20% 50V
C1523	1-104-664-11	ELECT 47MF	20% 25V	C2020	1-164-346-11	CERAMIC CHIP 1MF	16V
C1531	1-110-501-11	CERAMIC CHIP 0.33MF	10% 16V	C2024	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C1532	1-126-964-11	ELECT 10MF	20% 50V	C2025	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C1533	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C2027	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C1534	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V	C2031	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1535	1-110-501-11	CERAMIC CHIP 0.33MF	10% 16V	C2032	1-126-933-11	ELECT 100MF	20% 16V
C1537	1-163-038-91	CERAMIC CHIP 0.1MF	25V	C2701	1-126-964-11	ELECT 10MF	20% 50V
C1539	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C2702	1-126-967-11	ELECT 47MF	20% 16V
C1540	1-126-967-11	ELECT 47MF	20% 50V	C2706	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
C1541	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	< CONNECTOR >			
C1542	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	CN0001	*1-564-520-11	PLUG, CONNECTOR 5P	
C1543	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	CN0002	*1-568-878-51	PIN, CONNECTOR 3P	
C1544	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	CN0101	1-695-297-11	CONNECTOR, BOARD TO BOARD 20P	
C1545	1-107-823-11	CERAMIC CHIP 0.47MF	10% 16V	CN0102	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P	
C1546	1-163-038-91	CERAMIC CHIP 0.1MF	25V	CN0103	1-764-608-11	CONNECTOR, BOARD TO BOARD 8P	
C1547	1-164-695-11	CERAMIC CHIP 0.0022MF	5% 50V	CN0104	1-764-608-11	CONNECTOR, BOARD TO BOARD 8P	
C1548	1-163-055-00	CERAMIC CHIP 0.0047MF	10% 50V	CN0105	1-764-608-11	CONNECTOR, BOARD TO BOARD 8P	
C1549	1-163-055-00	CERAMIC CHIP 0.0047MF	10% 50V	CN0106	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P	
C1550	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	CN0107	1-695-297-11	CONNECTOR, BOARD TO BOARD 20P	
C1551	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	CN0108	1-695-297-11	CONNECTOR, BOARD TO BOARD 20P	
C1552	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	CN0109	*1-900-900-67	PIN, CONNECTOR 1P	
C1553	1-163-038-91	CERAMIC CHIP 0.1MF	25V	CN0111	*1-568-882-51	PIN, CONNECTOR 7P	
C1554	1-163-038-91	CERAMIC CHIP 0.1MF	25V	CN0113	*1-568-879-11	PIN, CONNECTOR 4P	
C1555	1-126-967-11	ELECT 47MF	20% 50V	CN0114	*1-564-511-11	PLUG, CONNECTOR 8P	
C1556	1-124-122-11	ELECT 100MF	20% 50V	CN0115	*1-568-881-51	PIN, CONNECTOR 6P	
C1558	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V				
C1559	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V				

The components identified by shading and marked \* are critical for safety. Replace only with the part number specified.

Les composants identifiés par une trame et une marque \* sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

KV-28WS3

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
CN0151	1-568-882-51	PIN, CONNECTOR 7P		< IC >			
CN0152	*1-568-882-51	PIN, CONNECTOR 7P		IC001	8-759-351-92	IC SDA30C164-2GEG	
		(KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3U)		IC002	8-759-353-82	IC TMS27PC020-15FML	
	*1-564-510-11	PLUG, CONNECTOR 7P (KV-28WS3K)		IC072	8-759-184-27	IC ST24C16CB1	
< RF DISTRIBUTOR >				IC201	8-759-348-87	IC TDA6812-2MGE	
CP101	1-251-372-11	DISTRIBUTOR, RF		IC202	8-759-502-21	IC TDA2822M	
< DIODE >				IC251	8-759-190-89	IC TDA7265	
D001	8-719-027-82	DIODE MA3039H-TX		IC261	8-759-190-89	IC TDA7265	
D003	8-719-914-42	DIODE DA204K		IC351	8-759-183-36	IC TDA8443B	
D068	8-719-914-44	DIODE DAP202K		IC352	8-759-085-51	IC NJM2284M	
D069	8-719-914-44	DIODE DAP202K		IC572	8-752-070-54	IC CXA1839Q-T6	
D071	8-719-109-89	DIODE RD5.6ESB2		IC681	8-759-518-68	IC PQ12RF21	
D073	8-719-109-89	DIODE RD5.6ESB2		IC682	8-759-513-71	IC PQ05RF21	
D075	8-719-914-43	DIODE DAN202K		IC683	8-759-908-15	IC TL431CLP	
D077	8-719-914-43	DIODE DAN202K		IC684	8-759-195-63	IC PQ09RE11	
D078	8-719-109-89	DIODE RD5.6ESB2		IC685	8-759-510-52	IC TEA7605	
D079	8-719-109-89	DIODE RD5.6ESB2		IC686	8-759-513-71	IC PQ05RF21	
D101	8-719-982-27	DIODE MTZJ-33C				(KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
D201	8-719-914-42	DIODE DA204K		IC1001	8-752-869-17	IC CXP85112B-622Q-TL	
		(KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)		IC1101	8-759-251-58	IC SAA7283GP (KV-28WS3B/28WS3E/28WS3U)	
D251	8-719-991-33	DIODE 1SS133T-77		IC1501	8-759-192-71	IC STV9379	
D252	8-719-991-33	DIODE 1SS133T-77		IC1531	8-752-068-39	IC CXA1840S	
D253	8-719-991-33	DIODE 1SS133T-77		IC2001	8-759-248-91	IC SDA9086-5	
D254	8-719-991-33	DIODE 1SS133T-77		IC2002	8-759-337-48	IC SDA5273P-C26-GEG	
D255	8-719-914-43	DIODE DAN202K		IC2003	8-759-188-60	IC MB81C4256A-70PSZG	
D256	8-719-991-33	DIODE 1SS133T-77		IC2701	8-759-603-37	IC M5216P	
D257	8-719-991-33	DIODE 1SS133T-77		< IF BLOCK >			
D258	8-719-991-33	DIODE 1SS133T-77		IFB101	1-473-191-11	IF BLOCK (KV-28WS3A/28WS3D/28WS3E)	
D259	8-719-991-33	DIODE 1SS133T-77			1-467-573-13	IF BLOCK (KV-28WS3B)	
D260	8-719-991-33	DIODE 1SS133T-77			1-467-873-12	IF BLOCK (KV-28WS3K)	
D261	8-719-991-33	DIODE 1SS133T-77			1-473-190-11	IF BLOCK (KV-28WS3U)	
D262	8-719-991-33	DIODE 1SS133T-77		< COIL >			
D263	8-719-914-43	DIODE DAN202K		L001	1-408-421-00	INDUCTOR 100UH	
D265	8-719-914-42	DIODE DA204K		L101	1-408-413-00	INDUCTOR 22UH	
D351	8-719-991-33	DIODE 1SS133T-77		L102	1-408-413-00	INDUCTOR 22UH	
D581	8-719-914-43	DIODE DAN202K		L201	1-407-500-00	INDUCTOR 4.7MMH	
D1001	8-719-914-44	DIODE DAP202K		L1002	1-408-397-00	INDUCTOR 1UH	
D1002	8-719-914-43	DIODE DAN202K		L1101	1-412-004-31	INDUCTOR CHIP 6.8UH	
D1003	8-719-914-43	DIODE DAN202K				(KV-28WS3B/28WS3E/28WS3U)	
D1101	8-719-914-43	DIODE DAN202K (KV-28WS3B/28WS3E/28WS3U)		L1102	1-408-419-00	INDUCTOR 68UH	
D1102	8-719-820-71	DIODE 1SV214 (KV-28WS3B/28WS3E/28WS3U)				(KV-28WS3B/28WS3E/28WS3U)	
D1503	8-719-908-03	DIODE GP08D		L1103	1-408-419-00	INDUCTOR 68UH	
						(KV-28WS3B/28WS3E/28WS3U)	
D1504	8-719-110-41	DIODE RD15ESB2		L1501	1-412-524-11	INDUCTOR 8.2UH	
D1505	8-719-914-43	DIODE DAN202K		L1531	1-412-537-31	INDUCTOR 100UH	
D1510	8-719-914-42	DIODE DA204K		L2001	1-410-674-31	INDUCTOR 82UH	
D1511	8-719-982-03	DIODE MTZJ-3.6A		L2002	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
D1530	8-719-914-43	DIODE DAN204K		< IC LINK >			
D1533	8-719-400-75	DIODE MA3091		PS681	1-532-637-91	LINK, IC (ICP-N25) 1.0A	
D1534	8-719-914-43	DIODE DAN202K		< TRANSISTOR >			
D1536	8-719-105-82	DIODE RD5.1M-B2		Q002	8-729-216-22	TRANSISTOR 2SA1162-G	
D1539	8-719-914-42	DIODE DA204K		Q005	8-729-027-59	TRANSISTOR DTC144EKA-T146	
D1542	8-719-923-60	DIODE MTZJ-T-77-9.1A		Q006	8-729-920-74	TRANSISTOR 2SC2412K-QR	
D1543	8-719-914-42	DIODE DA204K		Q007	8-729-027-59	TRANSISTOR DTC144EKA-T146	
D1544	8-719-914-42	DIODE DA204K		Q008	8-729-920-74	TRANSISTOR 2SC2412K-QR	
D1545	8-719-914-42	DIODE DA204K		Q102	8-729-027-52	TRANSISTOR DTC124EKA-T146	
D2001	8-719-036-58	DIODE MA3030-H(TX)					
D2004	8-719-914-43	DIODE DAN202K					
D2701	8-719-914-44	DIODE DAP202K					

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
Q103	8-729-027-52	TRANSISTOR DTC124EKA-T146		JR202	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3K)	
Q106	8-729-821-00	TRANSISTOR 2SA1207		JR279	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q107	8-729-255-12	TRANSISTOR 2SC2551-O		JR280	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q110	8-729-027-59	TRANSISTOR DTC144EKA-T146		JR1013	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q203	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)		JR1501	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q252	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR2002	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q253	8-729-216-22	TRANSISTOR 2SA1162-G		R001	1-216-025-91	METAL GLAZE 100 5% 1/10W	
Q254	8-729-920-74	TRANSISTOR 2SC2412K-QR		R002	1-216-025-91	METAL GLAZE 100 5% 1/10W	
Q255	8-729-920-74	TRANSISTOR 2SC2412K-QR		R003	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
Q256	8-729-920-74	TRANSISTOR 2SC2412K-QR		R004	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q257	8-729-920-74	TRANSISTOR 2SC2412K-QR		R006	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q258	8-729-920-74	TRANSISTOR 2SC2412K-QR		R007	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q281	8-729-920-74	TRANSISTOR 2SC2412K-QR		R008	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q282	8-729-920-74	TRANSISTOR 2SC2412K-QR		R009	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
Q351	8-729-216-22	TRANSISTOR 2SA1162-G		R010	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q352	8-729-216-22	TRANSISTOR 2SA1162-G		R012	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q571	8-729-920-74	TRANSISTOR 2SC2412K-QR		R013	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q581	8-729-920-74	TRANSISTOR 2SC2412K-QR		R014	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q681	8-729-032-65	TRANSISTOR 2SD2396H		R016	1-216-045-00	METAL GLAZE 680 5% 1/10W	
Q1001	8-729-216-22	TRANSISTOR 2SA1162-G		R017	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q1105	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3B/28WS3E/28WS3U)		R018	1-216-041-00	METAL GLAZE 470 5% 1/10W	
Q1106	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3B/28WS3E/28WS3U)		R020	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q1107	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3B/28WS3E/28WS3U)		R021	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q1108	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3B/28WS3E/28WS3U)		R025	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q1505	8-729-931-45	TRANSISTOR IRF614		R028	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
Q1506	8-729-920-74	TRANSISTOR 2SC2412K-QR		R029	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q1507	8-729-216-22	TRANSISTOR 2SA1162-G		R030	1-216-025-91	METAL GLAZE 100 5% 1/10W	
Q1508	8-729-027-59	TRANSISTOR DTC144EKA-T146		R031	1-216-041-00	METAL GLAZE 470 5% 1/10W	
Q1510	8-729-216-22	TRANSISTOR 2SA1162-G		R032	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q1511	8-729-027-59	TRANSISTOR DTC144EKA-T146		R033	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q1512	8-729-027-59	TRANSISTOR DTC144EKA-T146		R034	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
Q1531	8-729-216-22	TRANSISTOR 2SA1162-G		R035	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
Q1532	8-729-216-22	TRANSISTOR 2SA1162-G		R036	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
Q1533	8-729-216-22	TRANSISTOR 2SA1162-G		R037	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q1544	8-729-920-74	TRANSISTOR 2SC2412K-QR		R038	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q1545	8-729-920-74	TRANSISTOR 2SC2412K-QR		R047	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
Q1547	8-729-216-22	TRANSISTOR 2SA1162-G		R048	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q1548	8-729-216-22	TRANSISTOR 2SA1162-G		R049	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q1549	8-729-920-74	TRANSISTOR 2SC2412K-QR		R050	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q2001	8-729-920-74	TRANSISTOR 2SC2412K-QR		R051	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q2002	8-729-920-74	TRANSISTOR 2SC2412K-QR		R052	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q2004	8-729-027-52	TRANSISTOR DTC124EKA-T146		R054	1-216-041-00	METAL GLAZE 470 5% 1/10W	
Q2005	8-729-920-74	TRANSISTOR 2SC2412K-QR		R062	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
Q2006	8-729-027-59	TRANSISTOR DTC144EKA-T146		R067	1-216-043-91	METAL GLAZE 560 5% 1/10W	
Q2008	8-729-027-52	TRANSISTOR DTC124EKA-T146		R068	1-216-043-91	METAL GLAZE 560 5% 1/10W	
Q2701	8-729-920-74	TRANSISTOR 2SC2412K-QR		R069	1-216-037-00	METAL GLAZE 330 5% 1/10W	
< RESISTOR >				R072	1-216-033-00	METAL GLAZE 220 5% 1/10W	
JR001	1-216-295-91	METAL GLAZE 0 5% 1/10W		R073	1-216-033-00	METAL GLAZE 220 5% 1/10W	
JR002	1-216-295-91	METAL GLAZE 0 5% 1/10W		R074	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
JR101	1-216-295-91	METAL GLAZE 0 5% 1/10W		R077	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
JR102	1-216-295-91	METAL GLAZE 0 5% 1/10W		R083	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
JR201	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3K)		R085	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
				R101	1-216-025-91	METAL GLAZE 100 5% 1/10W	
				R102	1-216-025-91	METAL GLAZE 100 5% 1/10W	
				R105	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
				R108	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
				R109	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
				R110	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
				R111	1-216-089-91	METAL GLAZE 47K 5% 1/10W	

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R115	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R275	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R116	1-215-901-00	METAL OXIDE	33K 5% 2W F	R276	1-216-073-00	METAL GLAZE	10K 5% 1/10W
				R277	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R121	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R278	1-216-103-91	METAL GLAZE	180K 5% 1/10W
R124	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R279	1-216-103-91	METAL GLAZE	180K 5% 1/10W
R125	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R280	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R127	1-216-295-91	METAL GLAZE	0 5% 1/10W	R282	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R130	1-216-295-91	METAL GLAZE	0 5% 1/10W	R284	1-216-041-00	METAL GLAZE	470 5% 1/10W
R131	1-216-295-91	METAL GLAZE	0 5% 1/10W	R285	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R201	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W	R286	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R202	1-216-657-11	METAL CHIP	1.8K 0.50% 1/10W	R287	1-216-041-00	METAL GLAZE	470 5% 1/10W
R203	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W	R288	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W
R204	1-216-657-11	METAL CHIP	1.8K 0.50% 1/10W	R289	1-216-357-00	METAL OXIDE	4.7 5% 1W F
R205	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	R290	1-216-357-00	METAL OXIDE	4.7 5% 1W F
R206	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R291	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R207	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R292	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R208	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R293	1-216-033-00	METAL GLAZE	220 5% 1/10W
R209	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R294	1-216-033-00	METAL GLAZE	220 5% 1/10W
R210	1-247-734-11	CARBON	39 5% 1/2W	R295	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R211	1-247-734-11	CARBON	39 5% 1/2W	R296	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R212	1-216-025-91	METAL GLAZE	100 5% 1/10W	R297	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R213	1-216-025-91	METAL GLAZE	100 5% 1/10W	R298	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R214	1-216-025-91	METAL GLAZE	100 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	R299	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R218	1-249-389-11	CARBON	4.7 5% 1/4W F	R351	1-216-033-00	METAL GLAZE	220 5% 1/10W
R219	1-249-389-11	CARBON	4.7 5% 1/4W F	R352	1-216-033-00	METAL GLAZE	220 5% 1/10W
R221	1-216-091-00	METAL GLAZE	56K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	R353	1-216-033-00	METAL GLAZE	220 5% 1/10W
R222	1-249-389-11	CARBON	4.7 5% 1/4W F	R354	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R241	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	R355	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R242	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R356	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R243	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R357	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R244	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R358	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R246	1-216-097-91	METAL GLAZE	100K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	R359	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3E/28WS3K/28WS3U)
R247	1-216-097-91	METAL GLAZE	100K 5% 1/10W	R360	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3B)
R248	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R361	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R249	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R362	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3B)
R250	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W	R363	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R251	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R364	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R253	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R365	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R257	1-216-041-00	METAL GLAZE	470 5% 1/10W	R366	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R258	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R367	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)
R259	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R368	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3B)
R260	1-216-041-00	METAL GLAZE	470 5% 1/10W	R369	1-216-033-00	METAL GLAZE	220 5% 1/10W
R261	1-216-065-91	METAL GLAZE	4.7K 5% 1/10W	R371	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R262	1-216-357-00	METAL OXIDE	4.7 5% 1W F	R372	1-216-043-91	METAL GLAZE	560 5% 1/10W
R263	1-216-357-00	METAL OXIDE	4.7 5% 1W F	R373	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R264	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R375	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R265	1-216-079-91	METAL GLAZE	18K 5% 1/10W	R376	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R266	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R377	1-216-033-00	METAL GLAZE	220 5% 1/10W
R267	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R378	1-216-033-00	METAL GLAZE	220 5% 1/10W
R268	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R379	1-216-025-91	METAL GLAZE	100 5% 1/10W
R269	1-216-039-00	METAL GLAZE	390 5% 1/10W	R380	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R270	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W				
R271	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W				
R272	1-216-025-91	METAL GLAZE	100 5% 1/10W				
R273	1-216-073-00	METAL GLAZE	10K 5% 1/10W				
R274	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W				

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R384	1-216-022-00	METAL GLAZE	75 5% 1/10W	R1125	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R385	1-216-022-00	METAL GLAZE	75 5% 1/10W	R1132	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R386	1-216-022-00	METAL GLAZE	75 5% 1/10W	R1133	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R575	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1144	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R576	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1145	1-216-001-00	METAL GLAZE	10 5% 1/10W
R578	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1146	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R579	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1147	1-216-039-00	METAL GLAZE	390 5% 1/10W
R580	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1148	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R581	1-216-685-11	METAL CHIP	27K 0.50% 1/10W	R1149	1-216-001-00	METAL GLAZE	10 5% 1/10W
R582	1-216-047-91	METAL GLAZE	820 5% 1/10W	R1150	1-216-039-00	METAL GLAZE	390 5% 1/10W
R583	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1151	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R584	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1501	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R587	1-216-017-91	METAL GLAZE	47 5% 1/10W	R1502	1-216-659-11	METAL CHIP	2.2K 0.50% 1/10W
R588	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R1503	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R681	1-216-471-11	METAL OXIDE	27 5% 3W F	R1504	1-216-025-91	METAL GLAZE	100 5% 1/10W
R682	1-249-407-11	CARBON	150 5% 1/4W	R1505	1-216-025-91	METAL GLAZE	100 5% 1/10W
R683	1-216-041-00	METAL GLAZE	470 5% 1/10W	R1506	1-216-025-91	METAL GLAZE	100 5% 1/10W
R684	1-249-419-11	CARBON	1.5K 5% 1/4W	R1509	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R685	1-247-807-31	CARBON	100 5% 1/4W	R1512	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R1001	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1513	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W
R1003	1-216-295-91	METAL GLAZE	0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	R1514	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R1005	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1515	1-215-455-00	METAL	27K 1% 1/4W
R1006	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1516	1-249-385-11	CARBON	2.2 5% 1/4W F
R1007	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1517	1-216-371-00	METAL OXIDE	1.5 5% 2W F
R1008	1-216-025-91	METAL GLAZE	100 5% 1/10W	R1519	1-216-475-11	METAL OXIDE	120 5% 3W F
R1009	1-216-025-91	METAL GLAZE	100 5% 1/10W	R1520	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R1017	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1521	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1018	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1522	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1019	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1523	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R1020	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1524	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R1022	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1526	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R1023	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1527	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R1024	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1529	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1025	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1531	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1026	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1532	1-216-133-00	METAL GLAZE	3.3M 5% 1/10W
R1027	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1534	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R1028	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1539	1-216-073-00	METAL GLAZE	10K 5% 1/10W
< R1101 - R1151 FITTED ON >				R1540	1-216-045-00	METAL GLAZE	680 5% 1/10W
< KV-28WS3E/28WS3E/28WS3U >				R1541	1-216-037-00	METAL GLAZE	330 5% 1/10W
R1101	1-216-025-91	METAL GLAZE	100 5% 1/10W	R1542	1-216-182-00	METAL GLAZE	220 5% 1/8W
R1102	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1543	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1103	1-216-134-00	METAL GLAZE	2.2 5% 1/8W	R1544	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1104	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1545	1-216-673-11	METAL CHIP	8.2K 0.50% 1/10W
R1105	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R1546	1-216-025-91	METAL GLAZE	100 5% 1/10W
R1106	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1547	1-216-025-91	METAL GLAZE	100 5% 1/10W
R1107	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R1548	1-216-295-91	METAL GLAZE	0 5% 1/10W
R1108	1-216-121-91	METAL GLAZE	1M 5% 1/10W	R1549	1-216-045-91	METAL GLAZE	680 5% 1/10W
R1109	1-216-121-91	METAL GLAZE	1M 5% 1/10W	R1553	1-216-025-91	METAL GLAZE	100 5% 1/10W
R1110	1-216-150-91	METAL GLAZE	10 5% 1/8W	R1554	1-216-025-91	METAL GLAZE	100 5% 1/10W
R1111	1-216-025-91	METAL GLAZE	100 5% 1/10W	R1558	1-216-025-91	METAL GLAZE	100 5% 1/10W
R1112	1-216-025-91	METAL GLAZE	100 5% 1/10W	R1561	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1113	1-216-117-00	METAL GLAZE	680K 5% 1/10W	R1562	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1114	1-216-158-00	METAL GLAZE	22 5% 1/8W	R1563	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R1115	1-216-121-91	METAL GLAZE	1M 5% 1/10W	R1564	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R1116	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1565	1-216-282-00	METAL GLAZE	3.3M 5% 1/8W
R1117	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1568	1-216-103-91	METAL GLAZE	180K 5% 1/10W
R1118	1-216-134-00	METAL GLAZE	2.2 5% 1/8W	R1569	1-216-073-00	METAL GLAZE	10K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3U)
R1119	1-216-133-00	METAL GLAZE	3.3M 5% 1/10W	R1570	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R1124	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R1571	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W

A

IF ( KV-28WS3A/28WS3D/28WS3E )  
KV-28WS3K/28WS3U

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R1572	1-216-073-00	METAL GLAZE 10K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3U)		R2033	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1573	1-216-089-91	METAL GLAZE 47K 5% 1/10W		R2034	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1574	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W		R2035	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R1575	1-216-085-00	METAL GLAZE 33K 5% 1/10W		R2036	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1576	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		R2037	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R1577	1-216-089-91	METAL GLAZE 47K 5% 1/10W		R2038	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R1578	1-216-085-00	METAL GLAZE 33K 5% 1/10W		R2039	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R1579	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3U)		R2040	1-216-125-00	METAL GLAZE 1.5M 5% 1/10W	
R1580	1-215-867-00	METAL OXIDE 470 5% 1W F		R2701	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1581	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		R2702	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1582	1-216-089-91	METAL GLAZE 47K 5% 1/10W		R2703	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1583	1-216-081-00	METAL GLAZE 22K 5% 1/10W		R2704	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1584	1-208-822-11	METAL CHIP 47K 0.50% 1/10W		R2705	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1585	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R2706	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1586	1-208-806-11	METAL CHIP 10K 0.50% 1/10W		R2707	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1587	1-216-677-11	METAL CHIP 12K 0.50% 1/10W		R2708	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1588	1-216-295-91	METAL GLAZE 0 5% 1/10W		R2713	1-216-295-91	METAL GLAZE 0 5% 1/10W	
R1589	1-216-295-91	METAL GLAZE 0 5% 1/10W		< THERMISTOR >			
R1590	1-216-093-00	METAL GLAZE 68K 5% 1/10W		TH1501	1-810-035-21	THERMISTOR	
R1591	1-216-089-91	METAL GLAZE 47K 5% 1/10W		< TUNER >			
R1592	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W		TU101	1-693-315-21	TUNER (UV1316)	
R1593	1-216-073-00	METAL GLAZE 10K 5% 1/10W				(KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
R1594	1-216-286-00	METAL GLAZE 4.7M 5% 1/8W			1-693-314-21	TUNER (U1344) (KV-28WS3U)	
R1595	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W		< CRYSTAL >			
R1597	1-216-109-00	METAL GLAZE 330K 5% 1/10W		X1001	1-577-082-11	VIBRATOR, CERAMIC (4MHz)	
R1601	1-216-083-00	METAL GLAZE 27K 5% 1/10W		X1101	1-579-689-21	VIBRATOR, CRYSTAL (8.192MHz)	
R1602	1-216-129-00	METAL GLAZE 2.2M 5% 1/10W				(KV-28WS3B/28WS3E/28WS3U)	
R1604	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W		X1531	1-760-895-21	VIBRATOR, CERAMIC (2.69MHz)	
R1605	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		X2001	1-760-551-21	VIBRATOR, CERAMIC (20.5MHz)	
R1607	1-216-101-00	METAL GLAZE 150K 5% 1/10W		*****			
R1608	1-216-119-00	METAL GLAZE 820K 5% 1/10W			1-473-191-11	IF BLOCK (IFH-389WE) (KV-28WS3A/28WS3D/28WS3E)	
R1609	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W			1-467-873-12	IF BLOCK (IFH-389BE) (KV-28WS3K)	
R1610	1-216-075-00	METAL GLAZE 12K 5% 1/10W			1-473-190-11	IF BLOCK (IFH-395GB) (KV-28WS3U)	
R1613	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W			< CAPACITOR >		
R1615	1-216-025-91	METAL GLAZE 100 5% 1/10W		C01	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
R1616	1-216-105-91	METAL GLAZE 220K 5% 1/10W		C02	1-164-299-11	CERAMIC CHIP 0.22MF 10% 25V	
R1617	1-216-025-91	METAL GLAZE 100 5% 1/10W		C03	1-164-337-11	CERAMIC CHIP 2.2MF 16V	
R1618	1-216-025-91	METAL GLAZE 100 5% 1/10W		C04	1-164-337-11	CERAMIC CHIP 2.2MF 16V	
R2002	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C05	1-126-965-11	ELECT 22MF 20% 50V	
R2003	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		C06	1-126-965-11	ELECT 22MF 20% 50V	
R2005	1-216-041-00	METAL GLAZE 470 5% 1/10W		C07	1-163-019-00	CERAMIC CHIP 0.0068MF 10% 50V	
R2007	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C08	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
R2008	1-216-025-91	METAL GLAZE 100 5% 1/10W		C09	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
R2009	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W		C10	1-163-090-00	CERAMIC CHIP 7PF 0.25MF 50V	
R2010	1-216-025-91	METAL GLAZE 100 5% 1/10W		C11	1-164-337-11	CERAMIC CHIP 2.2MF 16V	
R2011	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W		C12	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
R2012	1-216-017-91	METAL GLAZE 47 5% 1/10W		C13	1-124-910-11	ELECT 47MF 20% 50V	
R2013	1-216-017-91	METAL GLAZE 47 5% 1/10W		C14	1-124-910-11	ELECT 47MF 20% 50V	
R2014	1-216-017-91	METAL GLAZE 47 5% 1/10W		C15	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
R2022	1-216-049-91	METAL GLAZE 1K 5% 1/10W		C16	1-164-346-11	CERAMIC CHIP 1MF 16V	
R2023	1-216-295-91	METAL GLAZE 0 5% 1/10W		C17	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
R2024	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		C18	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
R2025	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W		C19	1-164-346-11	CERAMIC CHIP 1MF 16V	
R2026	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W					
R2029	1-216-091-00	METAL GLAZE 56K 5% 1/10W					
R2030	1-216-025-91	METAL GLAZE 100 5% 1/10W					
R2031	1-216-295-91	METAL GLAZE 0 5% 1/10W					
R2032	1-216-049-91	METAL GLAZE 1K 5% 1/10W					

**IF ( KV-28WS3A/28WS3D/28WS3E )  
KV-28WS3K/28WS3U )**

REF.NO.	PART NO.	DESCRIPTION	REMARK
C20	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C21	1-164-222-11	CERAMIC CHIP 0.22MF 25V	
C22	1-124-910-11	ELECT 47MF 20% 50V	
C23	1-124-910-11	ELECT 47MF 20% 50V	
C24	1-124-910-11	ELECT 47MF 20% 50V (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
C25	1-124-910-11	ELECT 47MF 20% 50V (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
C26	1-124-910-11	ELECT 47MF 20% 50V	
C27	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C28	1-124-910-11	ELECT 47MF 20% 50V	
C29	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C30	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C31	1-124-910-11	ELECT 47MF 20% 50V	
C32	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C33	1-163-086-00	CERAMIC CHIP 3PF 0.25PF 50V	
C34	1-124-910-11	ELECT 47MF 20% 50V	
C35	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C36	1-104-666-11	ELECT 220MF 20% 6.3V (KV-28WS3K)	
C37	1-163-249-11	CERAMIC CHIP 82PF 5% 50V (KV-28WS3K)	
C38	1-163-237-11	CERAMIC CHIP 27PF 5% 50V (KV-28WS3A/28WS3D/28WS3E)	
	1-163-239-11	CERAMIC CHIP 33PF 5% 50V (KV-28WS3K)	
	1-163-243-11	CERAMIC CHIP 47PF 5% 50V (KV-28WS3U)	
C39	1-163-097-00	CERAMIC CHIP 15PF 5% 50V (KV-28WS3K)	
< FILTER >			
CF01	1-760-416-21	FILTER, CERAMIC (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
CF02	1-760-449-11	FILTER, CERAMIC (KV-28WS3K)	
CF03	1-760-450-11	FILTER, CERAMIC (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
CF04	1-760-106-11	TRAP, CERAMIC (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
	1-567-100-00	FILTER, CERAMIC (KV-28WS3U)	
CF05	1-404-134-00	TRAP, CERAMIC (5.5MHZ) (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
	1-409-333-00	TRAP, CERAMIC (6.0MHZ) (KV-28WS3U)	
SAW01	1-760-538-11	FILTER, SURFACE WAVE (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
	1-760-757-11	FILTER, SURFACE WAVE (KV-28WS3U)	
< CONNECTOR >			
CN01	1-750-919-11	PIN, CONNECTOR (PC BOARD) 10P	
CN02	1-750-919-11	PIN, CONNECTOR (PC BOARD) 10P	
< DIODE >			
D01	8-719-421-57	DIODE MA73-TX (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
D02	8-719-421-57	DIODE MA73-TX (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
	1-216-296-91	METAL GLAZE 0 5% 1/8W (KV-28WS3U)	
D03	8-719-914-43	DIODE DAN202K	

REF.NO.	PART NO.	DESCRIPTION	REMARK
< IC >			
IC01	8-759-289-18	IC TDA9813T-T	
IC02	8-759-514-54	IC BA7046	
IC03	8-759-991-41	IC L78L05ACZ-AP	
< COIL >			
L01	1-408-409-00	INDUCTOR 10UH (KV-28WS3A/28WS3D/28WS3E)	
	1-408-407-00	INDUCTOR 6.8UH (KV-28WS3K)	
	1-408-408-00	INDUCTOR 6.8UH (KV-28WS3U)	
L02	1-403-686-11	COIL	
L03	1-408-419-00	INDUCTOR 68UH	
L04	1-408-419-00	INDUCTOR 68UH	
L05	1-410-790-41	INDUCTOR 0.56UH	
L06	1-408-419-00	INDUCTOR 68UH	
L07	1-408-408-00	INDUCTOR 8.2UH (KV-28WS3K)	
< TRANSISTOR >			
Q01	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q02	8-729-901-01	TRANSISTOR DTC144EK (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
Q03	8-729-901-01	TRANSISTOR DTC144EK (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
Q04	8-729-216-22	TRANSISTOR 2SA1162-G	
Q05	8-729-216-22	TRANSISTOR 2SA1162-G	
Q06	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q07	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q08	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
Q09	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
Q10	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3K)	
< RESISTOR >			
JR01	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR02	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR03	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR04	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR05	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3U)	
JR06	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR10	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR11	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R01	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R02	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R03	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R04	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R05	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R06	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
R07	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
R08	1-216-039-00	METAL GLAZE 390 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
R09	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R10	1-216-081-00	METAL GLAZE 22K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
R11	1-216-081-00	METAL GLAZE 22K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
R12	1-216-113-00	METAL GLAZE 470K 5% 1/10W	

IF (KV-28WS3A/28WS3D/28WS3E)  
KV-28WS3K/28WS3U

IF (KV-28WS3B)

REF.NO.	PART.NO.	DESCRIPTION	REMARK	REF.NO.	PART.NO.	DESCRIPTION	REMARK
R13	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R54	1-216-075-00	METAL GLAZE 12K 5% 1/10W	(KV-28WS3K)
R14	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R55	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-28WS3K)
R15	1-216-035-00	METAL GLAZE	270 5% 1/10W	R56	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-28WS3K)
R17	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R57	1-216-295-91	METAL GLAZE 0 5% 1/10W	(KV-28WS3A/28WS3D/28WS3E/28WS3U)
R18	1-216-093-00	METAL GLAZE	68K 5% 1/10W		1-216-043-91	METAL GLAZE 560 5% 1/10W	(KV-28WS3K)
R19	1-216-242-91	METAL GLAZE	68K 5% 1/8W	R58	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R20	1-216-033-00	METAL GLAZE	180 5% 1/10W	R59	1-216-041-00	METAL GLAZE 470 5% 1/10W	(KV-28WS3K)
	1-216-031-00	METAL GLAZE	180 5% 1/10W	R60	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	(KV-28WS3U)
			(KV-28WS3K/28WS3U)	R61	1-216-025-91	METAL GLAZE 100 5% 1/10W	(KV-28WS3A/28WS3D/28WS3E/28WS3U)
R21	1-216-049-91	METAL GLAZE	1K 5% 1/10W	< VARIABLE RESISTOR >			
	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	RV01	1-241-786-11	RES, ADJ, CARBON 22K	
	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	*****			
R22	1-216-025-91	METAL GLAZE	100 5% 1/10W		1-467-573-13	IF BLOCK (IFH-389FX) (KV-28WS3B)	
R23	1-218-755-11	METAL CHIP	130K 0.50% 1/10W			*****	
R24	1-216-206-00	METAL GLAZE	2.2K 5% 1/8W	< CAPACITOR >			
R25	1-216-107-00	METAL GLAZE	270K 5% 1/10W	C101	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
R26	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C102	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R27	1-216-113-00	METAL GLAZE	470K 5% 1/10W	C104	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
R28	1-216-113-00	METAL GLAZE	470K 5% 1/10W	C111	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
R29	1-216-081-00	METAL GLAZE	22K 5% 1/10W	C112	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
R30	1-216-198-91	METAL GLAZE	1K 5% 1/8W	C113	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
R31	1-216-198-91	METAL GLAZE	1K 5% 1/8W	C114	1-124-925-11	ELECT 2.2MF	20% 50V
R32	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C115	1-124-916-11	ELECT 22MF	20% 50V
R33	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	C116	1-124-916-11	ELECT 22MF	20% 50V
R34	1-216-095-00	METAL GLAZE	82K 5% 1/10W	C117	1-163-090-00	CERAMIC CHIP 7PF	0.25PF 50V
R35	1-216-083-00	METAL GLAZE	27K 5% 1/10W	C120	1-124-925-11	ELECT 2.2MF	20% 50V
R36	1-216-075-00	METAL GLAZE	12K 5% 1/10W	C121	1-124-925-11	ELECT 2.2MF	20% 50V
R37	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C122	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
			(KV-28WS3A/28WS3D/28WS3E/28WS3K)	C123	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R38	1-216-095-00	METAL GLAZE	82K 5% 1/10W	C126	1-163-085-00	CERAMIC CHIP 2PF	0.25PF 50V
			(KV-28WS3A/28WS3D/28WS3E/28WS3K)	C128	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
R39	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	C131	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
			(KV-28WS3A/28WS3D/28WS3E/28WS3K)	C132	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
R40	1-216-075-00	METAL GLAZE	12K 5% 1/10W	C133	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
			(KV-28WS3A/28WS3D/28WS3E/28WS3K)	C134	1-163-239-11	CERAMIC CHIP 33PF	5% 50V
R41	1-216-083-00	METAL GLAZE	27K 5% 1/10W	C135	1-124-477-11	ELECT 47MF	20% 16V
R42	1-216-174-00	METAL GLAZE	100 5% 1/8W	C141	1-163-249-11	CERAMIC CHIP 82PF	5% 50V
R43	1-216-037-00	METAL GLAZE	330 5% 1/10W	C143	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
			(KV-28WS3A/28WS3D/28WS3E/28WS3K)	C145	1-124-477-11	ELECT 47MF	20% 16V
R44	1-216-037-00	METAL GLAZE	330 5% 1/10W	C151	1-124-477-11	ELECT 47MF	20% 16V
R45	1-216-198-91	METAL GLAZE	1K 5% 1/8W	C152	1-124-477-11	ELECT 47MF	20% 16V
			(KV-28WS3A/28WS3D/28WS3E/28WS3U)	C161	1-124-477-11	ELECT 47MF	20% 16V
	1-216-194-00	METAL GLAZE	680 5% 1/8W	C162	1-124-477-11	ELECT 47MF	20% 16V
			(KV-28WS3K)	C173	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
R46	1-216-049-91	METAL GLAZE	1K 5% 1/10W	C174	1-163-227-11	CERAMIC CHIP 10PF	0.5PF 50V
R47	1-216-198-91	METAL GLAZE	1K 5% 1/8W	C175	1-163-227-11	CERAMIC CHIP 10PF	0.5PF 50V
R48	1-216-049-91	METAL GLAZE	1K 5% 1/10W	C177	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
			(KV-28WS3A/28WS3D/28WS3E/28WS3K)	C191	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R49	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	C201	1-164-346-11	CERAMIC CHIP 1MF	16V
R50	1-216-039-00	METAL GLAZE	390 5% 1/10W	C202	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
R51	1-216-039-00	METAL GLAZE	390 5% 1/10W				
			(KV-28WS3K)				
R52	1-216-039-00	METAL GLAZE	390 5% 1/10W				
			(KV-28WS3A/28WS3D/28WS3E/28WS3K)				
R53	1-216-083-00	METAL GLAZE	27K 5% 1/10W				
			(KV-28WS3K)				

IF (KV-28WS3B)

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C203	1-124-477-11	ELECT 47MF	20% 16V	Q152	8-729-920-74	TRANSISTOR 2SC2412K-QR	
C204	1-164-346-11	CERAMIC CHIP 1MF	16V	Q153	8-729-920-74	TRANSISTOR 2SC2412K-QR	
C205	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	Q154	8-729-901-01	TRANSISTOR DTC144EK	
C206	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	Q161	8-729-920-74	TRANSISTOR 2SC2412K-QR	
C207	1-164-222-11	CERAMIC CHIP 0.22MF	25V	Q162	8-729-920-74	TRANSISTOR 2SC2412K-QR	
C208	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	Q171	8-729-216-22	TRANSISTOR 2SA1162-G	
C302	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	Q174	8-729-901-01	TRANSISTOR DTC144EK	
C502	1-124-477-11	ELECT 47MF	20% 16V	Q175	8-729-901-01	TRANSISTOR DTC144EK	
C503	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	Q176	8-729-901-01	TRANSISTOR DTC144EK	
C901	1-124-477-11	ELECT 47MF	20% 16V	Q181	8-729-920-74	TRANSISTOR 2SC2412K-QR	
C902	1-163-059-91	CERAMIC CHIP 0.01MF	10% 50V	Q191	8-729-216-22	TRANSISTOR 2SA1162-G	
< FILTER >				Q201	8-729-216-22	TRANSISTOR 2SA1162-G	
CF171	1-567-100-00	FILTER, CERAMIC		< RESISTOR >			
CF172	1-567-101-11	FILTER, CERAMIC		JR101	1-216-295-91	METAL GLAZE 0 5% 1/10W	
CF173	1-760-107-21	FILTER, CERAMIC		JR102	1-216-296-00	METAL GLAZE 0 5% 1/8W	
CF174	1-760-106-21	FILTER, CERAMIC		JR103	1-216-296-00	METAL GLAZE 0 5% 1/8W	
SWF101	1-579-273-11	FILTER, SURFACE WAVE		JR104	1-216-295-91	METAL GLAZE 0 5% 1/10W	
SWF103	1-760-244-21	FILTER, SURFACE WAVE		JR106	1-216-296-00	METAL GLAZE 0 5% 1/8W	
< CONNECTOR >				JR107	1-216-295-91	METAL GLAZE 0 5% 1/10W	
CN1	1-750-919-11	PIN, CONNECTOR (PC BOARD) 10P		JR109	1-216-295-91	METAL GLAZE 0 5% 1/10W	
CN2	1-750-919-11	PIN, CONNECTOR (PC BOARD) 10P		JR110	1-216-295-91	METAL GLAZE 0 5% 1/10W	
< TRIMMER >				JR111	1-216-296-00	METAL GLAZE 0 5% 1/8W	
CT101	1-760-154-21	TRAP, CERAMIC		JR112	1-216-295-91	METAL GLAZE 0 5% 1/10W	
CT131	1-409-430-11	TRAP, CERAMIC		JR113	1-216-296-00	METAL GLAZE 0 5% 1/8W	
< DIODE >				JR114	1-216-295-91	METAL GLAZE 0 5% 1/10W	
D101	8-719-914-43	DIODE DAN202K		JR115	1-216-295-91	METAL GLAZE 0 5% 1/10W	
D171	8-719-914-43	DIODE DAN202K		JR116	1-216-296-00	METAL GLAZE 0 5% 1/8W	
D201	8-719-914-43	DIODE DAN202K		JR117	1-216-296-00	METAL GLAZE 0 5% 1/8W	
< IC >				JR118	1-216-296-00	METAL GLAZE 0 5% 1/8W	
IC1	8-759-193-13	IC TDA9815		JR119	1-216-296-00	METAL GLAZE 0 5% 1/8W	
IC2	8-759-514-54	IC BA7046		JR120	1-216-295-91	METAL GLAZE 0 5% 1/10W	
IC3	8-752-069-79	IC CXA1875M		JR121	1-216-296-00	METAL GLAZE 0 5% 1/8W	
IC4	8-759-710-86	IC NJM2233BM		JR122	1-216-296-00	METAL GLAZE 0 5% 1/8W	
< COIL >				JR123	1-216-296-00	METAL GLAZE 0 5% 1/8W	
L101	1-408-419-00	INDUCTOR 68UH		JR124	1-216-296-00	METAL GLAZE 0 5% 1/8W	
L102	1-410-985-11	INDUCTOR CHIP 0.22UH		JR125	1-216-295-91	METAL GLAZE 0 5% 1/10W	
L131	1-408-407-00	INDUCTOR 6.8UH		JR126	1-216-295-91	METAL GLAZE 0 5% 1/10W	
L132	1-410-426-21	INDUCTOR 39UH		JR127	1-216-296-00	METAL GLAZE 0 5% 1/8W	
L142	1-408-409-00	INDUCTOR 10UH		JR128	1-216-295-91	METAL GLAZE 0 5% 1/10W	
L171	1-408-609-41	INDUCTOR 33UH		JR129	1-216-295-91	METAL GLAZE 0 5% 1/10W	
L201	1-408-419-00	INDUCTOR 68UH		JR130	1-216-296-00	METAL GLAZE 0 5% 1/8W	
L501	1-408-411-00	INDUCTOR 15UH		JR131	1-216-296-00	METAL GLAZE 0 5% 1/8W	
L901	1-408-411-00	INDUCTOR 15UH		JR132	1-216-296-00	METAL GLAZE 0 5% 1/8W	
< TRANSISTOR >				JR133	1-216-296-00	METAL GLAZE 0 5% 1/8W	
Q101	8-729-104-80	TRANSISTOR 2SC3355		JR134	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q102	8-729-901-01	TRANSISTOR DTC144EK		JR135	1-216-296-00	METAL GLAZE 0 5% 1/8W	
Q104	8-729-901-01	TRANSISTOR DTC144EK		JR136	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q121	8-729-216-22	TRANSISTOR 2SA1162-G		JR137	1-216-296-00	METAL GLAZE 0 5% 1/8W	
Q131	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR138	1-216-296-00	METAL GLAZE 0 5% 1/8W	
Q132	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR140	1-216-296-00	METAL GLAZE 0 5% 1/8W	
Q141	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR141	1-216-296-00	METAL GLAZE 0 5% 1/8W	
Q142	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR142	1-216-295-91	METAL GLAZE 0 5% 1/10W	
Q151	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR143	1-216-296-00	METAL GLAZE 0 5% 1/8W	
				JR145	1-216-296-00	METAL GLAZE 0 5% 1/8W	
				JR146	1-216-295-91	METAL GLAZE 0 5% 1/10W	
				JR150	1-216-295-91	METAL GLAZE 0 5% 1/10W	
				JR152	1-216-296-00	METAL GLAZE 0 5% 1/8W	
				JR154	1-216-296-00	METAL GLAZE 0 5% 1/8W	

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IF (KV-28WS3B)

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
JR160	1-216-296-00	METAL GLAZE	0 5% 1/8W	R184	1-216-043-00	METAL GLAZE	560 5% 1/10W
JR161	1-216-295-91	METAL GLAZE	0 5% 1/10W	R185	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
JR162	1-216-295-91	METAL GLAZE	0 5% 1/10W	R191	1-216-093-00	METAL GLAZE	68K 5% 1/10W
JR166	1-216-295-91	METAL GLAZE	0 5% 1/10W	R192	1-216-093-00	METAL GLAZE	68K 5% 1/10W
JR167	1-216-296-00	METAL GLAZE	0 5% 1/8W	R193	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R100	1-216-025-00	METAL GLAZE	100 5% 1/10W	R194	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R102	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R195	1-216-216-00	METAL GLAZE	5.6K 5% 1/8W
R103	1-216-001-00	METAL GLAZE	10 5% 1/10W	R201	1-216-198-91	METAL GLAZE	1K 5% 1/8W
R104	1-216-176-11	METAL GLAZE	120 5% 1/8W	R202	1-216-107-00	METAL GLAZE	270K 5% 1/10W
R105	1-216-017-00	METAL GLAZE	47 5% 1/10W	R203	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R106	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R204	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R107	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R205	1-218-755-11	METAL CHIP	130K 0.50% 1/10W
R109	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R206	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R111	1-216-295-91	METAL GLAZE	0 5% 1/10W	R207	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R113	1-216-031-00	METAL GLAZE	180 5% 1/10W	R208	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R114	1-216-035-00	METAL GLAZE	270 5% 1/10W	R209	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R115	1-216-035-00	METAL GLAZE	270 5% 1/10W	R210	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R116	1-216-025-00	METAL GLAZE	100 5% 1/10W	R211	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R117	1-216-031-00	METAL GLAZE	180 5% 1/10W	R301	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R118	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R302	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R120	1-216-180-00	METAL GLAZE	180 5% 1/8W	R303	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R131	1-216-198-91	METAL GLAZE	1K 5% 1/8W	R306	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R133	1-216-031-00	METAL GLAZE	180 5% 1/10W	R308	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R134	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R309	1-216-025-00	METAL GLAZE	100 5% 1/10W
R135	1-216-295-91	METAL GLAZE	0 5% 1/10W	R310	1-216-025-00	METAL GLAZE	100 5% 1/10W
R136	1-216-041-00	METAL GLAZE	470 5% 1/10W	< VARIABLE RESISTOR >			
R137	1-216-041-00	METAL GLAZE	470 5% 1/10W	RV111	1-241-786-11	RES, ADJ, CARBON	22K
R138	1-216-049-00	METAL GLAZE	1K 5% 1/10W	RV112	1-241-765-11	RES, ADJ, CARBON	22K
R139	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	< TRANSFORMER >			
R140	1-216-295-91	METAL GLAZE	0 5% 1/10W	T111	1-403-686-22	COIL	
R142	1-216-049-00	METAL GLAZE	1K 5% 1/10W	*****			
R144	1-216-041-00	METAL GLAZE	470 5% 1/10W	*A-1636-009-A G BOARD, COMPLETE			
R145	1-216-041-00	METAL GLAZE	470 5% 1/10W	*****			
R146	1-216-043-00	METAL GLAZE	560 5% 1/10W	4-368-683-21	SPRING, TRANSISTOR		
R147	1-216-025-00	METAL GLAZE	100 5% 1/10W	4-382-854-11	SCREW (M3X10), P, SW (+)		
R148	1-216-049-00	METAL GLAZE	1K 5% 1/10W	< CAPACITOR >			
R149	1-216-049-00	METAL GLAZE	1K 5% 1/10W	C602	1-165-127-11	CERAMIC	470PF 10% 500V
R151	1-216-226-00	METAL GLAZE	15K 5% 1/8W	C603	1-165-127-11	CERAMIC	470PF 10% 500V
R152	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	C604	1-136-171-00	FILM	0.33MF 5% 50V
R153	1-216-689-11	METAL GLAZE	39K 5% 1/10W	C605	1-137-399-11	FILM	0.1MF 5% 50V
R154	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C606	1-136-171-00	FILM	0.33MF 5% 50V
R155	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C607	1-137-399-11	FILM	0.1MF 5% 50V
R156	1-216-037-00	METAL GLAZE	330 5% 1/10W	C608	1-164-625-11	CERAMIC	680PF 10% 500V
R161	1-216-079-00	METAL GLAZE	18K 5% 1/10W	C609	1-129-718-00	FILM	0.022MF 5% 630V
R162	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	C610	1-126-953-11	ELECT	2200MF 20% 35V
R163	1-216-689-11	METAL GLAZE	39K 5% 1/10W	C611	1-126-953-11	ELECT	2200MF 20% 35V
R164	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C613	1-128-548-11	ELECT	4700MF 20% 25V
R165	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C614	1-128-548-11	ELECT	4700MF 20% 25V
R166	1-216-037-00	METAL GLAZE	330 5% 1/10W	C615	1-110-626-11	ELECT	330MF 20% 160V
R167	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C616	1-164-625-11	CERAMIC	680PF 10% 500V
R168	1-216-212-00	METAL GLAZE	3.9K 5% 1/8W	C617	1-136-559-11	MYLAR	0.0047MF 10% 400V
R169	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	C618	1-104-889-91	MYLAR	0.0022MF 10% 400V
R171	1-216-045-00	METAL GLAZE	680 5% 1/10W	C619	1-136-165-00	FILM	0.1MF 5% 50V
R177	1-216-025-00	METAL GLAZE	100 5% 1/10W	C620	1-126-519-12	ELECT	47MF 20% 50V
R178	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C621	$\Delta$ 1-136-518-12	FILM	0.47MF 20% 300V
R179	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C622	$\Delta$ 1-136-415-51	FILM	0.33MF 20% 300V
R180	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W				
R181	1-216-041-00	METAL GLAZE	470 5% 1/10W				
R182	1-216-041-00	METAL GLAZE	470 5% 1/10W				
R183	1-216-192-00	METAL GLAZE	560 5% 1/8W				

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C624	$\Delta$ 1-164-503-61	CERAMIC	0.0022MF 20% 400V	< FERRITE BEAD >			
C626	$\Delta$ 1-164-503-61	CERAMIC	0.0022MF 20% 400V	FB603	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
C627	1-126-940-11	ELECT	330MF 20% 25V	FB604	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
C628	1-126-965-11	ELECT	22MF 20% 50V	< IC >			
C629	1-162-599-12	CERAMIC	0.0047MF 250V	IC601	1-810-051-11	POWER MODULE DM-48	
C630	1-162-599-12	CERAMIC	0.0047MF 250V	IC602	$\Delta$ 8-749-010-64	PHOTO COUPLER PC123F2	
C631	$\Delta$ 1-161-964-91	CERAMIC	0.0047MF 250V	< COIL >			
C633	1-125-555-11	ELECT	330MF 20% 400V	L601	1-412-525-31	INDUCTOR 10UH	
C635	1-136-165-00	FILM	0.1MF 5% 50V	L602	1-412-525-31	INDUCTOR 10UH	
C636	1-136-165-00	FILM	0.1MF 5% 50V	L603	1-412-525-31	INDUCTOR 10UH	
C637	1-126-964-11	ELECT	10MF 20% 50V	L605	1-412-523-11	INDUCTOR 6.8UH	
C638	1-126-964-11	ELECT	10MF 20% 50V	L606	1-412-523-11	INDUCTOR 6.8UH	
C639	1-126-964-11	ELECT	10MF 20% 50V	< TRANSFORMER >			
C642	$\Delta$ 1-162-580-51	CERAMIC	0.01MF 400V	LF601	$\Delta$ 1-424-436-11	TRANSFORMER, LINE FILTER	
C645	1-102-002-91	CERAMIC	680PF 10% 500V	T601	$\Delta$ 1-429-255-11	TRANSFORMER, CONVERTER (PIT)	
C646	1-136-171-00	FILM	0.33MF 5% 50V	T602	$\Delta$ 1-427-864-11	TRANSFORMER, CONVERTER (PRT)	
C647	1-136-171-00	FILM	0.33MF 5% 50V	< IC LINK >			
C650	1-126-964-11	ELECT	10MF 20% 50V	PS601	$\Delta$ 1-532-686-91	LINK, IC (ICP-N75) 2.7A	
C651	1-136-171-00	FILM	0.33MF 5% 50V	PS602	$\Delta$ 1-532-686-91	LINK, IC (ICP-N75) 2.7A	
C652	1-136-171-00	FILM	0.33MF 5% 50V	PS604	$\Delta$ 1-532-686-91	LINK, IC (ICP-N75) 2.7A	
C653	1-136-169-00	FILM	0.22MF 5% 50V	PS605	$\Delta$ 1-532-845-21	LINK, IC (PRF4000) 4A	
< CONNECTOR >				< TRANSISTOR >			
CN0008	$\Delta$ 1-508-786-11	PIN, CONNECTOR (5MM PITCH) 2P		Q601	8-729-032-87	TRANSISTOR 2SC4834NP-F09	
CN0009	$\Delta$ 1-508-765-11	PIN, CONNECTOR (5MM PITCH) 3P		Q602	8-729-032-87	TRANSISTOR 2SC4834NP-F09	
CN0701	*1-564-516-11	PLUG, CONNECTOR 13P		Q603	8-729-119-78	TRANSISTOR 2SC2785-HFE	
CN0722	$\Delta$ *1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P		Q604	8-729-200-21	TRANSISTOR 2SC2500-B	
< DIODE >				Q605	8-729-173-38	TRANSISTOR 2SA733-K	
D601	8-719-510-53	DIODE D4SB60L		Q606	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D602	8-719-991-33	DIODE 1SS133T-77		Q607	8-729-029-56	TRANSISTOR DTA144ESA	
D603	8-719-109-89	DIODE RD5.6ESB2		Q608	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D605	8-719-047-31	DIODE RBA-402L		Q610	8-729-173-38	TRANSISTOR 2SA733-K	
D607	8-719-510-12	DIODE D10SC4M		Q611	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D608	8-719-510-12	DIODE D10SC4M		Q612	8-729-173-38	TRANSISTOR 2SA733-K	
D609	8-719-047-31	DIODE RBA-402L		Q613	8-729-030-03	TRANSISTOR DTC144ESA-TP	
D610	8-719-510-64	DIODE S2LA20F		Q614	8-729-029-56	TRANSISTOR DTA144ESA	
D612	8-719-911-19	DIODE 1SS119-25		Q615	8-729-200-21	TRANSISTOR 2SC2500-B	
D613	8-719-911-19	DIODE 1SS119-25		Q616	8-729-030-03	TRANSISTOR DTC144ESA-TP	
D614	8-719-911-19	DIODE 1SS119-25		Q617	8-729-029-56	TRANSISTOR DTA144ESA	
D615	8-719-911-19	DIODE 1SS119-25		< RESISTOR >			
D616	8-719-911-19	DIODE 1SS119-25		R601	1-202-933-61	FUSIBLE 0.1 10% 1/2W F	
D617	8-719-911-19	DIODE 1SS119-25		R602	1-247-891-00	CARBON 330K 5% 1/4W	
D618	8-719-911-19	DIODE 1SS119-25		R603	1-247-891-00	CARBON 330K 5% 1/4W	
D619	8-719-911-19	DIODE 1SS119-25		R604	1-216-369-00	METAL OXIDE 1 5% 2W F	
D620	8-719-911-19	DIODE 1SS119-25		R605	1-247-891-00	CARBON 330K 5% 1/4W	
D621	8-719-911-19	DIODE 1SS119-25		R606	1-247-891-00	CARBON 330K 5% 1/4W	
D622	8-719-510-64	DIODE S2LA20F		R607	1-216-369-00	METAL OXIDE 1 5% 2W F	
D623	8-719-510-64	DIODE S2LA20F		R608	1-247-887-00	CARBON 220K 5% 1/4W	
D624	8-719-312-39	DIODE R2K-V1		R609	1-249-429-11	CARBON 10K 5% 1/4W F	
D625	8-719-911-19	DIODE 1SS119-25		R610	1-249-419-11	CARBON 1.5K 5% 1/4W F	
D626	8-719-911-19	DIODE 1SS119-25		R616	$\Delta$ 1-205-949-11	WIREWOUND 1.8 5% 10W	
D627	8-719-911-19	DIODE 1SS119-25		R618	$\Delta$ 1-205-949-11	WIREWOUND 1.8 5% 10W	
D628	8-719-911-19	DIODE 1SS119-25		R619	$\Delta$ 1-244-945-91	CARBON 1M 5% 1/2W	
D630	8-719-991-33	DIODE 1SS133T-77		R620	$\Delta$ 1-218-265-91	METAL 8.2M 5% 1W	
D631	8-719-991-33	DIODE 1SS133T-77					
D632	8-719-991-33	DIODE 1SS133T-77					
D633	8-719-991-33	DIODE 1SS133T-77					
D634	8-719-991-33	DIODE 1SS133T-77					

The components identified by shading and marked  $\Delta$  are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R621	1-249-417-11	CARBON 1K 5% 1/4W F		C711	1-101-880-00	CERAMIC 47PF 5% 50V	
R622	1-249-430-11	CARBON 12K 5% 1/4W		C712	1-102-978-00	CERAMIC 220PF 5% 50V	
R623	1-249-436-11	CARBON 39K 5% 1/4W		C713	1-102-980-00	CERAMIC 270PF 5% 50V	
R624	1-249-425-11	CARBON 4.7K 5% 1/4W		C714	1-102-980-00	CERAMIC 270PF 5% 50V	
R625	1-247-815-91	CARBON 220 5% 1/4W		C716	1-128-526-11	ELECT 100MF 20% 16V	
R626	1-247-863-91	CARBON 22K 5% 1/4W		C720	1-162-116-00	CERAMIC 680PF 10% 2KV	
R627	1-247-815-91	CARBON 220 5% 1/4W		< CONNECTOR >			
R628	1-249-411-11	CARBON 330 5% 1/4W		CN0003	1-695-915-11	TAB (CONTACT)	
R630	1-249-429-11	CARBON 10K 5% 1/4W		CN0004	1-695-915-11	TAB (CONTACT)	
R631	1-215-477-00	METAL 220K 1% 1/4W		CN0411	*1-568-882-11	PIN, CONNECTOR 7P	
R632	1-249-417-11	CARBON 1K 5% 1/4W		CN0421	*1-508-767-00	PIN, CONNECTOR (5MM PITCH) 5P	
R633	1-249-429-11	CARBON 10K 5% 1/4W		< DIODE >			
R634	1-247-895-91	CARBON 470K 5% 1/4W		D701	8-719-991-33	DIODE 1SS133T-77	
R635	1-249-417-11	CARBON 1K 5% 1/4W		D702	8-719-991-33	DIODE 1SS133T-77	
R636	1-207-905-00	WIREWOUND 0.27 10% 2W F		D703	8-719-991-33	DIODE 1SS133T-77	
R637	1-249-389-11	CARBON 4.7 5% 1/4W F		D704	8-719-991-33	DIODE 1SS133T-77	
R638	1-249-425-11	CARBON 4.7K 5% 1/4W		D705	8-719-991-33	DIODE 1SS133T-77	
R639	1-247-791-91	CARBON 22 5% 1/4W		D706	8-719-991-33	DIODE 1SS133T-77	
R640	1-247-791-91	CARBON 22 5% 1/4W		D707	8-719-991-33	DIODE 1SS133T-77	
R641	1-247-791-91	CARBON 22 5% 1/4W		D708	8-719-991-33	DIODE 1SS133T-77	
R642	1-247-791-91	CARBON 22 5% 1/4W		D709	8-719-991-33	DIODE 1SS133T-77	
R644	1-249-425-11	CARBON 4.7K 5% 1/4W		D714	8-719-109-97	DIODE RD6.8ES-B2	
R645	1-249-415-11	CARBON 680 5% 1/4W		D715	8-719-018-82	DIODE RGP02-20EL-6394	
R646	1-249-403-11	CARBON 68 5% 1/4W		< CRT SOCKET >			
R647	1-249-429-11	CARBON 10K 5% 1/4W		J701	$\Delta$ 1-526-990-14	SOCKET, CRT	
R651	1-215-880-00	METAL OXIDE 10 5% 2W F		< COIL >			
R652	1-247-891-00	CARBON 330K 5% 1/4W		L701	1-408-413-00	INDUCTOR 22UH	
R653	1-247-891-00	CARBON 330K 5% 1/4W		L702	1-408-413-00	INDUCTOR 22UH	
R654	1-247-891-00	CARBON 330K 5% 1/4W		L703	1-408-409-00	INDUCTOR 10UH	
R655	1-247-891-00	CARBON 330K 5% 1/4W		L704	1-408-413-00	INDUCTOR 22UH	
R656	1-249-439-11	CARBON 68K 5% 1/4W		L705	1-408-409-00	INDUCTOR 10UH	
R657	1-249-429-11	CARBON 10K 5% 1/4W		L706	1-408-413-00	INDUCTOR 22UH	
R658	1-249-421-11	CARBON 2.2K 5% 1/4W		L707	1-408-409-00	INDUCTOR 10UH	
R659	1-249-425-11	CARBON 4.7K 5% 1/4W		< TRANSISTOR >			
R660	1-249-429-11	CARBON 10K 5% 1/4W		Q701	8-729-326-11	TRANSISTOR 2SC2611	
R661	1-249-421-11	CARBON 2.2K 5% 1/4W		Q702	8-729-326-11	TRANSISTOR 2SC2611	
R662	1-249-421-11	CARBON 2.2K 5% 1/4W		Q703	8-729-326-11	TRANSISTOR 2SC2611	
R663	1-249-429-11	CARBON 10K 5% 1/4W		Q704	8-729-326-11	TRANSISTOR 2SC2611	
R664	1-249-429-11	CARBON 10K 5% 1/4W		Q705	8-729-326-11	TRANSISTOR 2SC2611	
R665	1-249-425-11	CARBON 4.7K 5% 1/4W		Q706	8-729-326-11	TRANSISTOR 2SC2611	
< RELAY >				Q707	8-729-200-17	TRANSISTOR 2SA1091-0	
RY601	$\Delta$ 1-515-720-31	RELAY		Q708	8-729-200-17	TRANSISTOR 2SA1091-0	
< THERMISTOR >				Q709	8-729-200-17	TRANSISTOR 2SA1091-0	
THP601	$\Delta$ 1-809-827-11	THERMISTOR, POSITIVE		Q710	8-729-119-78	TRANSISTOR 2SC2785-HFE	
< VARISTOR >				Q711	8-729-119-78	TRANSISTOR 2SC2785-HFE	
VDR601	1-810-977-11	VARISTOR		Q712	8-729-119-78	TRANSISTOR 2SC2785-HFE	
*****				Q714	8-729-255-12	TRANSISTOR 2SC2551-0	
*A-1638-070-A C BOARD, COMPLETE				Q715	8-729-173-38	TRANSISTOR 2SA733-K	
*****				< RESISTOR >			
4-382-854-11 SCREW (M3X10), P, SW (+)				R701	1-202-846-00	SOLID 470K 20% 1/2W	
< CAPACITOR >				R702	1-202-838-00	SOLID 100K 20% 1/2W	
C701	1-162-114-00	CERAMIC 0.0047MF 2KV		R703	1-202-838-00	SOLID 100K 20% 1/2W	
C703	1-107-651-11	ELECT 4.7MF 20% 250V		R705	1-249-377-11	CARBON 0.47 5% 1/4W F	
				R706	1-249-377-11	CARBON 0.47 5% 1/4W F	



REF.NO.	PART NO.	DESCRIPTION	REMARK
R707	1-249-416-11	CARBON 820 5% 1/4W	
R708	1-249-416-11	CARBON 820 5% 1/4W	
R709	1-249-416-11	CARBON 820 5% 1/4W	
R710	1-215-922-11	METAL OXIDE 6.8K 5% 3W	F
R711	1-202-549-00	SOLID 100 20% 1/2W	
R712	1-215-922-11	METAL OXIDE 6.8K 5% 3W	F
R713	1-202-549-00	SOLID 100 20% 1/2W	
R714	1-215-922-11	METAL OXIDE 6.8K 5% 3W	F
R715	1-202-549-00	SOLID 100 20% 1/2W	
R716	1-249-405-11	CARBON 100 5% 1/4W	F
R717	1-249-405-11	CARBON 100 5% 1/4W	F
R718	1-249-405-11	CARBON 100 5% 1/4W	F
R725	1-249-421-11	CARBON 2.2K 5% 1/4W	
R726	1-249-421-11	CARBON 2.2K 5% 1/4W	
R727	1-249-421-11	CARBON 2.2K 5% 1/4W	
R728	1-249-407-11	CARBON 150 5% 1/4W	
R729	1-249-407-11	CARBON 150 5% 1/4W	
R730	1-249-407-11	CARBON 150 5% 1/4W	
R731	1-247-791-91	CARBON 22 5% 1/4W	
R732	1-247-791-91	CARBON 22 5% 1/4W	
R733	1-247-791-91	CARBON 22 5% 1/4W	
R734	1-202-549-00	SOLID 100 20% 1/2W	
R738	1-249-401-11	CARBON 47 5% 1/4W	
R739	1-249-401-11	CARBON 47 5% 1/4W	
R740	1-249-401-11	CARBON 47 5% 1/4W	
R743	1-249-435-11	CARBON 33K 5% 1/4W	
R747	1-216-489-11	METAL OXIDE 27K 5% 3W	F
R749	1-216-489-11	METAL OXIDE 27K 5% 3W	F
R751	1-216-489-11	METAL OXIDE 27K 5% 3W	F
R753	1-249-429-11	CARBON 10K 5% 1/4W	
R767	1-249-437-11	CARBON 47K 5% 1/4W	
R768	1-249-417-11	CARBON 1K 5% 1/4W	
< VARIABLE RESISTOR >			
R7701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M	
R7702	1-241-714-11	RES, ADJ, METAL FILM 110M	
*****			
*A-1640-182-A D BOARD, COMPLETE			
*****			
4-200-399-01 SPACER, IC			
4-382-854-11 SCREW (M3X10), P, SW (+)			
< CAPACITOR >			
C801	1-123-024-21	ELECT 33MF	160V
C802	1-136-207-11	FILM 0.047MF	10% 250V
C804	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C805	1-102-030-00	CERAMIC 330PF	10% 500V
C808	1-162-116-00	CERAMIC 680PF	10% 2KV
C809	1-162-116-00	CERAMIC 680PF	10% 2KV
C810	1-106-367-00	MYLAR 0.01MF	10% 400V
C811	1-109-833-11	FILM 0.0145MF	3% 1.8KV
C812	1-136-759-11	FILM 0.039MF	5% 630V
C813	1-109-844-11	FILM 0.68MF	5% 400V
C814	1-129-702-00	FILM 0.001MF	10% 400V
C816	1-109-844-11	FILM 0.68MF	5% 400V
C817	1-136-759-11	FILM 0.039MF	5% 630V
C819	1-137-102-91	FILM 0.022MF	10% 250V
C822	1-126-967-11	ELECT 47MF	20% 50V

REF.NO.	PART NO.	DESCRIPTION	REMARK
C823	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C824	1-162-117-00	CERAMIC 100PF	10% 500V
C825	1-124-902-00	ELECT 0.47MF	20% 50V
C827	1-102-228-00	CERAMIC 470PF	10% 500V
C835	1-107-655-11	ELECT 47MF	20% 250V
C836	1-102-228-00	CERAMIC 470PF	10% 500V
C837	1-102-228-00	CERAMIC 470PF	10% 500V
C838	1-102-228-00	CERAMIC 470PF	10% 500V
C839	1-126-941-11	ELECT 470MF	20% 25V
C840	1-126-941-11	ELECT 470MF	20% 25V
C841	1-106-375-12	MYLAR 0.022MF	10% 250V
C842	1-136-559-11	FILM 0.0047MF	10% 400V
C863	1-163-017-00	CERAMIC CHIP 0.047MF	10% 50V
C873	1-162-134-11	CERAMIC 470PF	10% 2KV
C874	1-164-645-11	CERAMIC 1000PF	10% 500V
C875	1-163-275-11	CERAMIC CHIP 0.001MF	5% 50V
C892	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
< CONNECTOR >			
CN0009	1-568-878-51	PIN, CONNECTOR 3P	
CN0501	*1-564-516-11	PLUG, CONNECTOR 13P	
CN0503	1-764-607-11	CONNECTOR, BOARD TO BOARD 8P	
CN0504	1-764-607-11	CONNECTOR, BOARD TO BOARD 8P	
CN0505	1-764-607-11	CONNECTOR, BOARD TO BOARD 8P	
CN0521	*1-508-767-00	PIN, CONNECTOR (5MM PITCH) 5P	
DY1	*1-580-798-11	CONNECTOR PIN (DY) 6P	
< DIODE >			
D802	8-719-979-99	DIODE ERD08M-15	
D803	8-719-043-14	DIODE ESAD39M-06C	
D804	8-719-971-20	DIODE ERC38-06	
D805	8-719-908-03	DIODE GP08D	
D806	8-719-908-03	DIODE GP08D	
D811	8-719-302-43	DIODE EL1Z	
D812	8-719-510-26	DIODE D1NL20	
D813	8-719-510-26	DIODE D1NL20	
D815	8-719-110-13	DIODE RD9.1ESB2	
D872	8-719-914-43	DIODE DAN202K	
D874	8-719-914-42	DIODE DA204K	
< FERRITE BEAD >			
FB801	1-410-396-51	FERRITE BEAD INDUCTOR 0.45UH	
FB802	1-410-396-51	FERRITE BEAD INDUCTOR 0.45UH	
FB803	1-410-396-51	FERRITE BEAD INDUCTOR 0.45UH	
< IC >			
IC801	8-759-103-93	IC UPC393C	
< COIL >			
L802	1-459-474-11	COIL (WITH CORE)	
L803	1-459-474-11	COIL (WITH CORE)	
L806	1-459-592-11	COIL (WITH CORE) (PMC)	
L811	1-459-104-00	COIL, WITH CORE	
L813	1-459-104-00	COIL, WITH CORE	
L814	1-422-613-11	COIL, AIR CORE	
L815	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
L816	1-408-947-00	INDUCTOR 2.2MMH	

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KV-28WS3



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
< TRANSISTOR >				*A-1644-064-A VM BOARD, COMPLETE *****			
Q801	8-729-119-80	TRANSISTOR 2SC2688-LK		*4-368-683-21	SPRING, TRANSISTOR		
Q802	8-729-821-07	TRANSISTOR 2SC3997CA		4-382-854-11	SCREW (M3X10), P, SW (+)		
Q803	8-729-931-45	TRANSISTOR 1RF614		< CAPACITOR >			
< RESISTOR >				C1701	1-126-933-11	ELECT 100MF	20% 16V
JR502	1-216-295-91	METAL GLAZE 0 5% 1/10W		C1702	1-102-074-00	CERAMIC 0.001MF	10% 50V
JR503	1-216-295-91	METAL GLAZE 0 5% 1/10W		C1703	1-126-933-11	ELECT 100MF	20% 16V
JR504	1-216-295-91	METAL GLAZE 0 5% 1/10W		C1704	1-126-933-11	ELECT 100MF	20% 16V
JR505	1-216-295-91	METAL GLAZE 0 5% 1/10W		C1705	1-107-638-11	ELECT 33MF	20% 160V
R802	1-215-916-00	METAL OXIDE 680 5% 3W F		C1706	1-104-999-11	FILM 0.1MF	5% 200V
R803	1-215-916-00	METAL OXIDE 680 5% 3W F		C1707	1-104-989-91	FILM 0.0022MF	5% 200V
R804	1-215-916-00	METAL OXIDE 680 5% 3W F		C1708	1-137-364-11	FILM 0.001MF	5% 50V
R805	1-215-923-00	METAL OXIDE 10K 5% 3W F		C1709	1-137-364-11	FILM 0.001MF	5% 50V
R806	1-216-037-00	METAL GLAZE 330 5% 1/10W		C1720	1-107-667-11	ELECT 2.2MF	20% 160V
R807	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W		C1721	1-104-989-91	FILM 0.0022MF	5% 200V
R808	1-216-385-11	METAL OXIDE 0.47 5% 3W F		C1722	1-128-581-11	ELECT 4.7MF	20% 100V
R809	1-215-880-00	METAL OXIDE 10 5% 2W F		C1723	1-161-830-00	CERAMIC 0.0047MF	500V
R810	1-215-914-11	METAL OXIDE 330 5% 3W F		C1841	1-130-481-00	FILM 0.0068MF	5% 50V
R811	1-216-434-11	METAL OXIDE 1.8K 5% 1W F		C1844	1-106-367-00	MYLAR 0.01MF	10% 400V
R817	1-202-972-61	FUSIBLE 1 5% 1/4W F		C1845	1-106-220-00	MYLAR 0.1MF	10% 100V
R818	1-249-377-11	CARBON 0.47 5% 1/4W F		< CONNECTOR >			
R819	1-249-377-11	CARBON 0.47 5% 1/4W F		CN1015	*1-568-881-51	PIN, CONNECTOR 6P	
R820	1-214-907-00	METAL 56K 1% 1/2W		< DIODE >			
R821	1-249-428-11	CARBON 8.2K 5% 1/4W		D1701	8-719-991-33	DIODE 1SS133T-77	
R823	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W		D1702	8-719-110-88	DIODE RD39ESB2	
R835	1-216-079-00	METAL GLAZE 18K 5% 1/10W		D1703	8-719-110-88	DIODE RD39ESB2	
R837	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W		D1840	8-719-302-43	DIODE EL1Z	
R842	1-249-887-11	CARBON 33 5% 1/4W F		D1841	8-719-991-33	DIODE 1SS133T-77	
R843	1-202-822-00	SOLID 2.2K 20% 1/2W		< COIL >			
R844	1-249-424-11	CARBON 3.9K 5% 1/4W		L1701	1-408-603-41	INDUCTOR 10UH	
R845	1-216-099-00	METAL GLAZE 120K 5% 1/10W		L1702	1-408-597-41	INDUCTOR 3.3UH	
R850	1-249-389-11	CARBON 4.7 5% 1/4W F		L1703	1-408-603-41	INDUCTOR 10UH	
R851	1-216-399-00	METAL OXIDE 6.8 5% 3W F		L1841	1-459-075-00	COIL, DYNAMIC CONVERSION CHOKI	
R852	1-216-119-00	METAL GLAZE 820K 5% 1/10W		L1843	1-459-104-00	COIL, WITH CORE	
R853	1-216-119-00	METAL GLAZE 820 5% 1/10W		< TRANSISTOR >			
R854	1-216-081-00	METAL GLAZE 22K 5% 1/10W		Q1701	8-729-119-78	TRANSISTOR 2SC2785-HFE	
R855	1-216-089-91	METAL GLAZE 47K 5% 1/10W		Q1702	8-729-119-78	TRANSISTOR 2SC2785-HFE	
R856	1-216-073-00	METAL GLAZE 10K 5% 1/10W		Q1703	8-729-017-05	TRANSISTOR 2SA1837	
R857	1-216-085-00	METAL GLAZE 33K 5% 1/10W		Q1704	8-729-119-78	TRANSISTOR 2SC2785-HFE	
R858	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W		Q1705	8-729-173-38	TRANSISTOR 2SA733-K	
R859	1-202-822-00	SOLID 2.2K 20% 1/2W		Q1706	8-729-017-06	TRANSISTOR 2SC4793	
R894	1-216-295-91	METAL GLAZE 0 5% 1/10W		Q1707	8-729-255-12	TRANSISTOR 2SC2551-0	
R895	1-215-866-11	METAL OXIDE 330 5% 1W F		Q1840	8-729-119-78	TRANSISTOR 2SC2785-HFE	
R896	1-216-295-91	METAL GLAZE 0 5% 1/10W		Q1841	8-729-017-06	TRANSISTOR 2SC4793	
R874	1-216-295-91	METAL GLAZE 0 5% 1/10W		< RESISTOR >			
R897	1-216-295-91	METAL GLAZE 270K 5% 1/10W		R1701	1-249-417-11	CARBON 1K 5% 1/4W	
R898	1-216-107-00	METAL GLAZE 0 5% 1/10W		R1702	1-249-417-11	CARBON 1K 5% 1/4W	
R899	1-216-105-91	METAL GLAZE 220K 5% 1/10W		R1703	1-249-421-11	CARBON 2.2K 5% 1/4W	
< TRANSFORMER >				R1704	1-249-415-11	CARBON 680 5% 1/4W	
T801	1-427-762-11	TRANSFORMER, FERRITE (HDT)		R1705	1-247-791-91	CARBON 22 5% 1/4W	
T803	1-426-897-11	TRANSFORMER, FERRITE (PMT)		R1706	1-247-791-91	CARBON 22 5% 1/4W	
T804	1-429-288-11	COIL, HORIZONTAL LINEARITY		R1707	1-247-807-31	CARBON 100 5% 1/4W	
T805	1-453-187-11	TRANSFORMER ASSY, FLYBACK (NX-2661/UZE)		R1708	1-249-410-11	CARBON 270 5% 1/4W	
T806	1-413-059-00	TRANSFORMER, FERRITE (DFT)					

VM	H1	H2	J
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REF.NO.	PART NO.	DESCRIPTION	REMARK
R1709	1-249-401-11	CARBON 47 5% 1/4W	
R1710	1-249-401-11	CARBON 47 5% 1/4W	
R1711	1-249-429-11	CARBON 10K 5% 1/4W	
R1712	1-260-311-11	CARBON 39 5% 1/2W	
R1713	1-249-384-11	CARBON 1.8 5% 1/4W F	
R1714	1-249-414-11	CARBON 560 5% 1/4W F	
R1715	1-249-432-11	CARBON 18K 5% 1/4W	
R1716	1-249-417-11	CARBON 1K 5% 1/4W F	
R1717	1-216-476-11	METAL OXIDE 180 5% 3W F	
R1718	1-249-432-11	CARBON 18K 5% 1/4W	
R1719	1-249-384-11	CARBON 1.8 5% 1/4W F	
R1720	1-249-400-11	CARBON 39 5% 1/4W F	
R1721	1-249-414-11	CARBON 560 5% 1/4W	
R1722	1-249-401-11	CARBON 47 5% 1/4W	
R1723	1-249-426-11	CARBON 5.6K 5% 1/4W	
R1841	1-247-871-91	CARBON 47K 5% 1/4W	
R1842	1-247-764-11	CARBON 10K 5% 1/2W	
R1843	1-249-421-11	CARBON 2.2K 5% 1/4W	
R1844	1-249-421-11	CARBON 2.2K 5% 1/4W	
R1847	1-249-887-11	CARBON 33 5% 1/4W F	
R1848	1-215-875-11	METAL OXIDE 10K 5% 1W F	
R1849	1-247-764-11	CARBON 10K 5% 1/2W	

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\*A-1646-098-A H1 BOARD, COMPLETE  
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1-568-678-11 TERMINAL BLOCK, S 3P  
1-764-606-11 JACK

&lt; CAPACITOR &gt;

C081	1-102-973-00	CERAMIC 100PF 5% 50V	
C082	1-102-973-00	CERAMIC 100PF 5% 50V	
C083	1-101-005-00	CERAMIC 0.022MF 50V	
C087	1-101-005-00	CERAMIC 0.022MF 50V	

&lt; CONNECTOR &gt;

CN1113	*1-568-879-11	PIN, CONNECTOR 4P	
CN1123	*1-564-512-11	PLUG, CONNECTOR 9P	

&lt; COIL &gt;

L081	1-408-409-00	INDUCTOR 10UH	
L082	1-408-409-00	INDUCTOR 10UH	

&lt; RESISTOR &gt;

R081	1-249-429-11	CARBON 10K 5% 1/4W	
R082	1-249-425-11	CARBON 4.7K 5% 1/4W	
R083	1-249-421-11	CARBON 2.2K 5% 1/4W	
R084	1-249-419-11	CARBON 1.5K 5% 1/4W	
R085	1-249-419-11	CARBON 1.5K 5% 1/4W	

&lt; SWITCH &gt;

S081	1-571-532-21	SWITCH, TACTIL	
S082	1-571-532-21	SWITCH, TACTIL	
S083	1-571-532-21	SWITCH, TACTIL	

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1646-099-A	H2 BOARD, COMPLETE (KV-28WS3A/28WS3D/ ***** 28WS3E/28WS3K/ 28WS3U)	
	*A-1646-108-A	H2 BOARD, COMPLETE (KV-28WS3B) *****	
	*4-374-987-01	GUIDE, LIGHT	
	4-381-686-01	BRACKET (B), LIGHT GUIDE	
	< CONNECTOR >		
CN1214	*1-564-511-11	PLUG, CONNECTOR 8P	
	< DIODE >		
D091	8-719-989-36	DIODE LD-201DU (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
D092	8-719-948-31	DIODE LD-201VR	
	*4-201-076-01	HOLDER, LED ; D092	
D093	8-719-948-31	DIODE LD-201VR	
	*4-201-076-01	HOLDER, LED ; D093	
D094	8-719-948-31	DIODE LD-201VR	
	*4-201-076-01	HOLDER, LED ; D094	
	< IC >		
IC091	8-741-810-11	IC SBX1810-11	

&lt; RESISTOR &gt;

R091	1-249-413-11	CARBON 470 5% 1/4W	
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\*A-1651-073-A J BOARD, COMPLETE  
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&lt; CAPACITOR &gt;

C270	1-163-063-00	CERAMIC CHIP 0.022MF	50V
C271	1-163-063-00	CERAMIC CHIP 0.022MF	50V
C273	1-101-003-00	CERAMIC 0.0047MF	50V
C274	1-101-003-00	CERAMIC 0.0047MF	50V
C275	1-101-005-00	CERAMIC 0.022MF	50V
C290	1-101-005-00	CERAMIC 0.022MF	50V
C295	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C296	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C401	1-164-005-11	CERAMIC CHIP 0.47MF	16V
C402	1-126-933-11	ELECT 100MF	20% 16V
C403	1-164-005-11	CERAMIC CHIP 0.47MF	16V
C410	1-126-966-11	ELECT 33MF	20% 50V
C421	1-126-967-11	ELECT 47MF	20% 50V
C422	1-126-967-11	ELECT 47MF	20% 50V
C423	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C424	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C425	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C426	1-126-967-11	ELECT 47MF	20% 16V
C427	1-164-346-11	CERAMIC CHIP 1MF	16V
C428	1-164-346-11	CERAMIC CHIP 1MF	16V
C429	1-126-940-11	ELECT 330MF	20% 16V
C901	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C902	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C904	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C905	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C906	1-101-004-00	CERAMIC 0.01MF	50V
C907	1-163-129-00	CERAMIC CHIP 330PF	5% 50V

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REMARK

REF.NO.	PART NO.	DESCRIPTION	REMARK
C908	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C909	1-101-004-00	CERAMIC 0.01MF	50V
C910	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C911	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C912	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C913	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C914	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C915	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C916	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C917	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C918	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C919	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C920	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C921	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C922	1-126-967-11	ELECT 47MF	20% 16V
C923	1-164-346-11	CERAMIC CHIP 1MF	16V
C924	1-126-967-11	ELECT 47MF	20% 16V
C925	1-126-967-11	ELECT 47MF	20% 16V
C926	1-164-346-11	CERAMIC CHIP 1MF	16V
C928	1-126-967-11	ELECT 47MF	20% 16V
C929	1-126-967-11	ELECT 47MF	20% 16V
C930	1-126-967-11	ELECT 47MF	20% 16V
C931	1-164-346-11	CERAMIC CHIP 1MF	16V
C932	1-164-346-11	CERAMIC CHIP 1MF	16V
C933	1-126-967-11	ELECT 47MF	20% 16V
C935	1-126-967-11	ELECT 47MF	20% 16V
C936	1-164-346-11	CERAMIC CHIP 1MF	16V
C937	1-164-346-11	CERAMIC CHIP 1MF	16V
C938	1-126-967-11	ELECT 47MF	20% 16V
< CONNECTOR >			
CN0806	1-695-301-11	CONNECTOR, BOARD TO BOARD 40P	
CN0807	1-695-300-11	CONNECTOR, BOARD TO BOARD 20P	
CN0823	1-564-524-11	PLUG, CONNECTOR 9P	
CN0824	*1-564-519-11	PLUG, CONNECTOR 4P	
CN0825	*1-564-519-11	PLUG, CONNECTOR 4P	
< DIODE >			
D401	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D403	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D405	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D406	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D407	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D901	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D902	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D903	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D904	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D905	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D906	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D907	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D908	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D909	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D910	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D911	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D913	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D914	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D915	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D916	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D917	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D919	8-719-923-60	DIODE MTZJ-T-77-9.1A	

REF.NO.	PART NO.	DESCRIPTION	REMARK
D920	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D921	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D922	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D923	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D924	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D925	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D926	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D927	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D928	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D930	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D931	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D932	8-719-923-60	DIODE MTZJ-T-77-9.1A	
< IC >			
IC401	8-752-068-46	IC CXA1855S	
IC402	8-759-073-00	IC TEA2114	
< SOCKET >			
J291	1-537-979-11	TERMINAL BOARD	
J292	1-537-978-11	TERMINAL BOARD	
J901	1-695-296-11	TERMINAL BLOCK, S	
J903	1-561-534-41	SOCKET, PIN 21P	
J904	1-695-296-11	TERMINAL BLOCK, S	
J905	1-695-293-11	SOCKET 21P	
J906	1-695-296-11	TERMINAL BLOCK, S	
J907	1-695-293-11	SOCKET 21P	
< COIL >			
L284	1-402-711-11	INDUCTOR, WIDEBAND	
L291	1-402-711-11	INDUCTOR, WIDEBAND	
L292	1-402-711-11	INDUCTOR, WIDEBAND	
L294	1-402-711-11	INDUCTOR, WIDEBAND	
L295	1-402-711-11	INDUCTOR, WIDEBAND	
L296	1-402-711-11	INDUCTOR, WIDEBAND	
< TRANSISTOR >			
Q401	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q402	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q403	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q404	8-729-920-74	TRANSISTOR 2SC2412K-QR	
< RESISTOR >			
JR291	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR292	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR294	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR296	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR297	1-216-296-91	METAL GLAZE 0 5%	1/8W
JR298	1-216-296-91	METAL GLAZE 0 5%	1/8W
JR401	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR402	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR403	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR404	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR405	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR406	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR407	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR408	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR901	1-216-295-91	METAL GLAZE 0 5%	1/10W
JR905	1-216-296-91	METAL GLAZE 0 5%	1/8W
JR907	1-216-296-91	METAL GLAZE 0 5%	1/8W
JR908	1-216-296-91	METAL GLAZE 0 5%	1/8W



REF.NO.	PART NO.	DESCRIPTION	REMARK
JR909	1-216-295-91	METAL GLAZE	0 5% 1/10W
JR910	1-216-296-91	METAL GLAZE	0 5% 1/8W
JR911	1-216-295-91	METAL GLAZE	0 5% 1/8W
R283	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R284	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R285	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R286	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R291	1-216-190-00	METAL GLAZE	470 5% 1/8W
R292	1-216-190-00	METAL GLAZE	470 5% 1/8W
R293	1-216-216-00	METAL GLAZE	5.6K 5% 1/8W
R294	1-216-216-00	METAL GLAZE	5.6K 5% 1/8W
R401	1-216-158-00	METAL GLAZE	22 5% 1/8W
R403	1-216-025-91	METAL GLAZE	100 5% 1/10W
R404	1-216-158-00	METAL GLAZE	22 5% 1/8W
R405	1-216-025-91	METAL GLAZE	100 5% 1/10W
R406	1-216-158-00	METAL GLAZE	22 5% 1/8W
R407	1-216-025-91	METAL GLAZE	100 5% 1/10W
R410	1-216-174-00	METAL GLAZE	100 5% 1/8W
R411	1-216-174-00	METAL GLAZE	100 5% 1/8W
R412	1-216-022-00	METAL GLAZE	75 5% 1/10W
R413	1-216-022-00	METAL GLAZE	75 5% 1/10W
R414	1-216-022-00	METAL GLAZE	75 5% 1/10W
R416	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R417	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R419	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R420	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R421	1-216-171-00	METAL GLAZE	75 5% 1/8W
R423	1-216-015-00	METAL GLAZE	39 5% 1/10W
R424	1-216-174-00	METAL GLAZE	100 5% 1/8W
R425	1-216-174-00	METAL GLAZE	100 5% 1/8W
R428	1-249-393-11	CARBON	10 5% 1/4W F
R429	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R430	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R431	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R432	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R433	1-216-296-91	METAL GLAZE	0 5% 1/8W
R434	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R435	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R436	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R437	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R438	1-216-296-91	METAL GLAZE	0 5% 1/8W
R439	1-216-296-91	METAL GLAZE	0 5% 1/8W
R440	1-216-296-91	METAL GLAZE	0 5% 1/8W
R901	1-216-039-00	METAL GLAZE	390 5% 1/10W
R902	1-216-039-00	METAL GLAZE	390 5% 1/10W
R903	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R904	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R905	1-216-039-00	METAL GLAZE	390 5% 1/10W
R906	1-216-039-00	METAL GLAZE	390 5% 1/10W
R907	1-216-171-00	METAL GLAZE	75 5% 1/8W
R908	1-216-171-00	METAL GLAZE	75 5% 1/8W
R909	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R910	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R911	1-216-022-00	METAL GLAZE	75 5% 1/10W
R913	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R914	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R915	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R916	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R917	1-216-171-00	METAL GLAZE	75 5% 1/8W
R918	1-216-171-00	METAL GLAZE	75 5% 1/8W

REF.NO.	PART NO.	DESCRIPTION	REMARK
R919	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R920	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R921	1-216-022-00	METAL GLAZE	75 5% 1/10W
R922	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R923	1-216-039-00	METAL GLAZE	390 5% 1/10W
R924	1-216-039-00	METAL GLAZE	390 5% 1/10W
R925	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R926	1-216-039-00	METAL GLAZE	390 5% 1/10W
R927	1-216-039-00	METAL GLAZE	390 5% 1/10W
R928	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R929	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R930	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R931	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R932	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R933	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R934	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R935	1-216-022-00	METAL GLAZE	75 5% 1/10W
R936	1-216-171-00	METAL GLAZE	75 5% 1/8W
R937	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R938	1-216-039-00	METAL GLAZE	390 5% 1/10W
R939	1-216-039-00	METAL GLAZE	390 5% 1/10W
R940	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R941	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R942	1-216-039-00	METAL GLAZE	390 5% 1/10W
R943	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R944	1-216-039-00	METAL GLAZE	390 5% 1/10W
R945	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R946	1-216-022-00	METAL GLAZE	75 5% 1/10W
R948	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R949	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R950	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R951	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R952	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R953	1-216-039-00	METAL GLAZE	390 5% 1/10W
R954	1-216-039-00	METAL GLAZE	390 5% 1/10W
R955	1-216-039-00	METAL GLAZE	390 5% 1/10W
R956	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R957	1-216-039-00	METAL GLAZE	390 5% 1/10W
R958	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R959	1-216-674-11	METAL CHIP	9.1K 0.50% 1/10W
R960	1-216-674-11	METAL CHIP	9.1K 0.50% 1/10W
R961	1-216-674-11	METAL CHIP	9.1K 0.50% 1/10W
R967	1-216-171-00	METAL GLAZE	75 5% 1/8W
R968	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R969	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R970	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R971	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R972	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R973	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R974	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R975	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R976	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R977	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1654-017-A	T BOARD, COMPLETE (KV-28WS3A/28WS3D/ ***** 28WS3E/28WS3K)		C5152	1-124-925-11	ELECT 2.2MF 20% 50V	
	*A-1654-020-A	T BOARD, COMPLETE (KV-28WS3B) *****		C5154	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3B)	
	*A-1654-019-A	T BOARD, COMPLETE (KV-28WS3U) *****				< FILTER >	
		< CAPACITOR >		CF5101	1-760-106-11	FILTER, CERAMIC (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
C5101	1-104-664-11	ELECT 47MF 20% 25V			1-567-100-00	FILTER, CERAMIC (KV-28WS3B)	
C5110	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V		CF5102	1-760-450-21	FILTER, CERAMIC (KV-28WS3B)	
C5111	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V (KV-28WS3B)		CF5103	1-760-106-11	FILTER, CERAMIC (KV-28WS3B)	
					1-567-100-00	FILTER, CERAMIC (KV-28WS3U)	
C5112	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)				< CONNECTOR >	
	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3U)		CN5151	1-568-882-51	PIN, CONNECTOR 7P	
C5113	1-163-024-00	CERAMIC CHIP 0.018MF 10% 50V (KV-28WS3B)		CN5152	*1-568-882-51	PIN, CONNECTOR 7P	
						< TRIMMER >	
C5114	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V		CT5104	1-409-430-11	TRAP, CERAMIC (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C5115	1-163-085-00	CERAMIC CHIP 2PF 0.25PF 50V			1-409-333-00	TRAP, CERAMIC (6.0MHZ) (KV-28WS3U)	
C5116	1-163-090-00	CERAMIC CHIP 7PF 0.25PF 50V		CT5105	1-760-154-11	TRAP, CERAMIC (KV-28WS3B)	
C5117	1-107-682-11	CERAMIC CHIP 1MF 10% 16V (KV-28WS3B)				< DIODE >	
				D5102	8-719-914-43	DIODE DAN202K (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C5118	1-124-925-11	ELECT 2.2MF 20% 50V		D5103	8-719-914-43	DIODE DAN202K (KV-28WS3B)	
C5119	1-124-925-11	ELECT 2.2MF 20% 50V		D5104	8-719-914-43	DIODE DAN202K (KV-28WS3B)	
C5120	1-104-664-11	ELECT 47MF 20% 25V				< IC >	
C5121	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V		IC5102	8-752-072-94	IC CXA1875AM-T4	
C5122	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V		IC5103	8-759-361-11	IC TDA9813T/V3-T3 (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
					8-759-360-90	IC TDA9814T/V3-T3 (KV-28WS3B)	
C5123	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V		IC5104	8-759-710-86	IC NJM2233BM (KV-28WS3B)	
C5125	1-164-489-11	CERAMIC CHIP 0.22MF 10% 16V				< COIL >	
C5127	1-126-965-11	ELECT 22MF 20% 50V		L5101	1-408-419-00	INDUCTOR 68UH	
C5128	1-163-133-00	CERAMIC CHIP 470PF 5% 50V		L5102	1-408-408-00	INDUCTOR 8.2UH (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
C5129	1-163-016-00	CERAMIC CHIP 0.0039MF 10% 50V (KV-28WS3B)			1-408-407-00	INDUCTOR 6.8UH (KV-28WS3B/28WS3U)	
				L5103	1-408-411-00	INDUCTOR 15UH	
C5130	1-104-664-11	ELECT 47MF 20% 25V		L5104	1-408-876-00	INDUCTOR 0.22UH (KV-28WS3B)	
C5131	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V		L5105	1-412-748-21	INDUCTOR 10UH (KV-28WS3B)	
C5132	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V (KV-28WS3B)		L5106	1-412-754-21	INDUCTOR 39UH (KV-28WS3B)	
C5133	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V (KV-28WS3B)		L5107	1-408-421-00	INDUCTOR 100UH	
C5134	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V					
C5135	1-104-664-11	ELECT 47MF 20% 25V		L5108	1-408-413-00	INDUCTOR 22UH	
C5136	1-104-664-11	ELECT 47MF 20% 25V (KV-28WS3B)		L5109	1-408-419-00	INDUCTOR 68UH	
C5137	1-163-024-00	CERAMIC CHIP 0.018MF 10% 50V (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)		T5101	1-403-686-11	COIL	
						< TRANSISTOR >	
C5139	1-163-251-11	CERAMIC CHIP 100PF 5% 50V (KV-28WS3B)		Q5104	8-729-027-59	TRANSISTOR DTC144EKA-T146 (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C5140	1-163-113-00	CERAMIC CHIP 68PF 5% 50V (KV-28WS3B)		Q5105	8-729-027-59	TRANSISTOR DTC144EKA-T146 (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
C5142	1-163-239-11	CERAMIC CHIP 33PF 5% 50V (KV-28WS3B)		Q5106	8-729-027-59	TRANSISTOR DTC144EKA-T146 (KV-28WS3B)	
				Q5107	8-729-027-59	TRANSISTOR DTC144EKA-T146 (KV-28WS3B)	
C5144	1-163-097-00	CERAMIC CHIP 15PF 5% 50V (KV-28WS3B)		Q5108	8-729-920-74	TRANSISTOR 2SC2412K-QR	
C5145	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V		Q5109	8-729-920-74	TRANSISTOR 2SC2412K-QR	
C5146	1-104-664-11	ELECT 47MF 20% 25V		Q5110	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3B)	
C5149	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V					
C5150	1-126-933-11	ELECT 100MF 20% 16V					
C5151	1-126-964-11	ELECT 10MF 20% 16V (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)					
	1-126-933-11	ELECT 100MF 20% 16V (KV-28WS3B)					

## KV-28WS3

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REF.NO.	PART NO.	DESCRIPTION	REMARK
Q5111	8-729-027-59	TRANSISTOR DTC144EKA-T146 (KV-28WS3B)	
Q5112	8-729-027-59	TRANSISTOR DTC144EKA-T146 (KV-28WS3B)	
Q5113	8-729-027-59	TRANSISTOR DTC144EKA-T146 (KV-28WS3B)	
Q5114	8-729-022-54	TRANSISTOR 2SC3779C,D-AA	
Q5115	8-729-216-22	TRANSISTOR 2SA1162-G	
Q5116	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q5117	8-729-216-22	TRANSISTOR 2SA1162-G (KV-28WS3B)	
Q5118	8-729-920-74	TRANSISTOR 2SC2412K-QR (KV-28WS3B)	
Q5121	8-729-027-59	TRANSISTOR DTC144EKA-T146 (KV-28WS3B)	
< RESISTOR >			
JR5101	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR5102	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR5105	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3B)	
JR5106	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
JR5107	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
JR5108	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR5109	1-216-295-91	METAL GLAZE 0 5% 1/10W	
JR5110	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
JR5111	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
JR5113	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
JR5114	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3B)	
JR5115	1-216-296-91	METAL GLAZE 0 5% 1/8W (KV-28WS3B)	
JR5116	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR5117	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R5112	1-216-073-00	METAL GLAZE 10K 5% 1/10W (KV-28WS3B)	
R5113	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R5114	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R5115	1-216-073-00	METAL GLAZE 10K 5% 1/10W (KV-28WS3B)	
R5116	1-216-073-00	METAL GLAZE 10K 5% 1/10W (KV-28WS3B)	
R5117	1-216-049-91	METAL GLAZE 1K 5% 1/10W (KV-28WS3B)	
R5119	1-216-049-91	METAL GLAZE 1K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
R5120	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R5121	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R5122	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R5123	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
R5124	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
R5125	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3B)	
R5126	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3B)	
R5127	1-216-043-91	METAL GLAZE 560 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R5128	1-216-043-91	METAL GLAZE 560 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
R5129	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)	
R5130	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3B)	
R5131	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K)	
R5132	1-216-029-00	METAL GLAZE 150 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R5133	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W (KV-28WS3B)	
R5134	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R5135	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R5136	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R5137	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R5138	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R5139	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W	
R5140	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W (KV-28WS3B)	
R5141	1-216-073-00	METAL GLAZE 10K 5% 1/10W (KV-28WS3B)	
R5142	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R5143	1-216-689-11	METAL GLAZE 39K 5% 1/10W	
R5144	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R5145	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R5146	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R5147	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R5148	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R5149	1-216-180-00	METAL GLAZE 180 5% 1/8W	
R5150	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3B)	
R5151	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3B)	
R5152	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W (KV-28WS3B)	
R5153	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R5154	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R5155	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R5156	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R5158	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R5160	1-216-049-91	METAL GLAZE 1K 5% 1/10W (KV-28WS3B)	
R5161	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)	
R5162	1-216-037-00	METAL GLAZE 330 5% 1/10W (KV-28WS3B)	
R5163	1-216-037-00	METAL GLAZE 330 5% 1/10W (KV-28WS3B)	
R5164	1-216-037-00	METAL GLAZE 330 5% 1/10W (KV-28WS3B)	

The components identified by shading and marked  $\Delta$  are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R5165	1-216-025-91	METAL GLAZE 100 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)				MISCELLANEOUS *****	
	1-216-043-91	METAL GLAZE 560 5% 1/10W (KV-28WS3B)		$\Delta$ 1-409-646-11	COIL, DEGAUSSING		
R5166	1-216-049-91	METAL GLAZE 1K 5% 1/10W (KV-28WS3B)		1-452-032-00	MAGNET, DISK; 10MM $\emptyset$		
R5168	1-216-295-91	METAL GLAZE 0 5% 1/10W (KV-28WS3B)		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\emptyset$		
R5169	1-216-049-91	METAL GLAZE 1K 5% 1/10W (KV-28WS3A/28WS3D/28WS3E/28WS3K/28WS3U)		$\Delta$ 1-452-724-11	COIL, NA ROTATION (RT-165)		
	1-216-033-00	METAL GLAZE 220 5% 1/10W (KV-28WS3B)		$\Delta$ 1-453-187-11	TRANSFORMER ASSY, FLYBACK (NX-2661/U2E)		
R5170	1-216-073-00	METAL GLAZE 10K 5% 1/10W		1-504-418-21	SPEAKER (5CM)		
R5171	1-216-093-00	METAL GLAZE 68K 5% 1/10W		1-505-154-11	SPEAKER (6.5CM)		
R5176	1-216-295-91	METAL GLAZE 0 5% 1/10W		1-505-155-11	SPEAKER (10CM)		
R5177	1-216-025-91	METAL GLAZE 100 5% 1/10W		$\Delta$ 1-540-006-22	CAP ASSY, HIGH-VOLTAGE		
R5178	1-216-025-91	METAL GLAZE 100 5% 1/10W		$\Delta$ 1-571-433-21	SWITCH, PUSH (AC POWER)		
R5180	1-216-222-00	METAL GLAZE 10K 5% 1/8W		1-693-315-21	TUNER (UV1316) (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)		
R5181	1-216-049-91	METAL GLAZE 1K 5% 1/10W		1-693-314-21	TUNER (U1344) (KV-28WS3U)		
R5182	1-216-049-91	METAL GLAZE 1K 5% 1/10W (KV-28WS3B)		$\Delta$ 1-751-680-11	CORD, POWER (WITH NOISE FILTER) 2.5A/250V (KV-28WS3A/28WS3B/28WS3D/ 28WS3E/28WS3K)		
R5183	1-216-174-00	METAL GLAZE 100 5% 1/8W		$\Delta$ 1-590-762-11	CORD, POWER (WITH PLUG) 2.5A/250V (KV-28WS3B)		
R5184	1-216-180-00	METAL GLAZE 180 5% 1/8W		$\Delta$ 8-451-433-11	DEFLECTION YOKE (Y28G1CM)		
< VARIABLE RESISTOR >				$\Delta$ 8-453-005-31	NECK ASSY, (NA297-M3)		
KV5101	1-241-765-11	RES, ADJ, CARBON 22K		V901 $\Delta$ 8-737-762-05	PICTURE TUBE (SD-284) (W661GY010IX)		
KV5102	1-241-765-11	RES, ADJ, CARBON 22K (KV-28WS3B)		*****			
SP5101	1-760-538-11	FILTER, SURFACE WAVE (KV-28WS3A/28WS3D/28WS3E/28WS3K)		ACCESSORIES AND PACKING MATERIALS *****			
	1-579-273-11	FILTER, SURFACE WAVE (KV-28WS3B)		1-765-654-11	CABLE, SPEAKER		
	1-760-757-11	FILTER, SURFACE WAVE (KV-28WS3U)		*4-050-192-01	CUSHION (LOWER) (ASSY)		
SP5102	1-760-244-11	FILTER, SURFACE WAVE (KV-28WS3B)		*4-050-191-11	CUSHION (UPPER) (ASSY)		
< TUNER >				*4-050-193-01	INDIVIDUAL CARTON		
TU5101	1-693-315-21	TUNER (UV1316) (KV-28WS3A/28WS3B/28WS3D/28WS3E/28WS3K)		4-203-155-41	MANUAL, INSTRUCTION (KV-28WS3A) (ITALIAN)		
	1-693-314-21	TUNER (U1344) (KV-28WS3U)		4-203-155-51	MANUAL, INSTRUCTION (KV-28WS3B) (FRENCH)		
*****				4-203-155-11	MANUAL, INSTRUCTION (KV-28WS3D) (GERMAN/ENGLISH/DUTCH/GREEK/FRENCH/ ITALIAN)		
				4-203-155-71	MANUAL, INSTRUCTION (KV-28WS3E) (DANISH/DUTCH/FINNISH/FRENCH/GERMAN/ NORWEGIAN/PORTUGUESE/SPANISH/SWEDISH)		
				4-203-155-91	MANUAL, INSTRUCTION (KV-28WS3K) (BULGARIAN/CZECH/HUNGARIAN/RUSSIAN/ ENGLISH/POLISH)		
				4-203-155-61	MANUAL, INSTRUCTION (KV-28WS3U) (ENGLISH)		
				*4-395-957-01	BAG, PROTECTION		
				REMOTE COMMANDER *****			
				1-466-854-41	COMMANDER, STANDARD TYPE (RM-850)		
				1-473-407-11	COMMANDER, STANDARD TYPE (RM-838)		
				9-903-466-01	POCKET, COVER (FOR RM-838)		
				*****			